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Decision Factors that Determine Choice of Medical Specialty Amongst Medical Students, Prevocational Doctors, General Practice Registrars and General Practitioners

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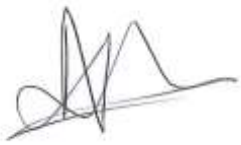
Declaration

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university.



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Amit Vohra

1st November 2015

Dedication

8 wedding anniversaries, 2 kids, 4 house moves across 2 cities, 2 jobs and 4 laptops – I'm shocked that its finally over and that I persevered till the end.

Thanks to ……

My darling wife who has sacrificed countless Saturday mornings so I could complete this epic dissertation.

My mum who has always believed in me and has given me the conviction that I could always achieve anything I wanted to pursue in life.

And above all to my dad….. who will not be here to see me get this doctorate, but who will always be my biggest hero and my proudest supporter.

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- The participants who shared their time and thoughts to contribute to the richness of the study.
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Abstract

"General Practice is the cornerstone of the Australian Healthcare System"; this mantra has been recited by many politicians and health sector commentators. This takes on a stronger significance against the backdrop of changing patient demographic profile, ongoing medical workforce shortages and rising healthcare costs with an increasing focus on producing the right workforce to meet the needs of the future. In seeking to answer the research question: "What are the Decision Factors that Determine Choice of Medical Specialty Amongst Medical Students, Prevocational Doctors, General Practice Registrars and General Practitioners?" the research design utilised a qualitative research methodology with an interactionistic approach framed in a constructivist paradigm. Data collection involved 47 participants in semi-structured, in-depth interviews with four distinct cohorts, including medical students, prevocational doctors, GP Registrars and practicing GPs. The interviews were transcribed, coded and analysed using the research software QSR NVIVO.

This study is the first of its kind in that it took an intergenerational approach when considering key factors that have remained constant over time whilst identifying new trends across the emerging medical workforce in relation to choice of specialty. Results from this study provide a framework for policy makers to ensure that workforce attraction, retention and distribution levers are applied in a way to leverage factors that are important in the decision context, and that these interventions are tailored to various segments of the medical profession to maximise impact.

The key limitation of this study is the interpretive nature of qualitative research in general, which involves the researcher in the issue being researched. This limitation of the potential lack of subjectivity of the researcher has been addressed by a range of techniques to add rigour and trustworthiness to the study. These techniques include established methods such as bracketing, member checks, coding verification, inter-observer agreement, inter-subject validity and reader verification.

The research findings indicate that the decision process in relation to the choice of medical specialty is a complex cognitive process that is undertaken within a personal, social, and professional context particular to each individual. The findings established that items such as money, prestige and peer interaction did not have a driving impact, whilst clinical and academic role models, flexibility, work-life balance, scope of practice, connection with patients, training environment and practical opportunities did. Subtle differences related to gender were also noted, with females more likely to be influenced by personal factors and key life events. However, above all, the study revealed that interaction with the range of factors was not a uniform process, demonstrating that different individuals are influenced differently based on a range of factors in their personal, social and professional lives, which are further impacted by age and career stage.

This led to the conclusion that individuals will have their own preference matrix (conscious or unconscious) that ultimately determines their career pathway and choice of specialty. Policy makers need to acknowledge and understand that they are seeking to influence highly skilled, educated and motivated professionals who have a broad range of choices and are driven by a range of closely interrelated personal, social and professional factors that are further impacted by the particular time in their own personal and professional life journey. The linkage and understanding of how these interrelate for an individual, or groups of individuals, is essential in order to design effective interventions and policy levers to manage workforce attraction, retention and distribution across various specialties.

Contents

List of Tables

List of Figures

Operational Definitions

The following definitions, listed in alphabetical order, are assumed in the context of this research:

Baby Boomers

Refers to individuals born between 1946 and 1964.

Bracketing

A qualitative research technique where the researcher acknowledges his or her own views in the research whilst objectively collecting and analysing the data from the research participants. This is intended to ensure that rigour is maintained whilst enhancing the richness of the data collected.

Family medicine

Used synonymously with the term “general practice”. A number of countries use the terms “family physicians”, “family practice” and “family medicine” when referring to what is called “general practice” or “general practitioners” in Australia.

GP Registrars

Graduated doctors who have completed their medical degree and are currently enrolled in the Australian General Practice Training Program (AGPT). Doctors have to go through a selection process to be accepted into the training program. Part of the training occurs in the hospital setting and the remaining training occurs in community and private general practice settings.

Generation X

Refers to individuals born between 1965 and 1980.

Generation Y

Refers to individuals born between 1981 and 2000.

Medical Specialties

Refers to the broad range of medical specialties that doctors can specialise in such as paediatrics, general practice, orthopaedics, cardiology, etc.

Medical Students

All students enrolled in an Australian medical university. At the time of conducting this research, there were 21 medical schools in Australia offering a range of undergraduate (5-6 years) and postgraduate (4 years) medical degrees.

Node

The name of the unit which represents the primary categorisation of data used by QSR NVivo® software. References to parent node and child nodes indicate hierarchy, with child nodes being sub-themes under the parent node.

Phenomenon

The particular circumstances and perceptions that form the experiences of the respondents in this research.

Policy Makers

Refers to a range of stakeholders, including commonwealth and state government policy makers, workforce planners, medical colleges and universities, as well as professional associations, health service providers and others who design interventions to manage workforce attraction, retention and distribution across various specialties.

Practising GPs

Refers to all general practitioners who are vocationally registered and have obtained either a fellowship of the Royal Australian College of General Practitioners (FRACGP) or the Fellowship of the Australian College of Rural and Remote Medicine (FACRRM).

Prevocational Doctors

Graduated medical students who are working as medical practitioners to gain experience and additional skills, but have not yet enrolled in a vocational training program. These doctors are typically found in the hospital system. Over 90% of these are between 1-5 years post completion of their medical degree.

QSR NVivo ®

The qualitative software program used in this research to organise, store, retrieve and analyse data.

Semi-structured interview

Refers to a data collection technique in which there are a number of pre-determined areas that the researcher wants to explore and therefore needs the conversation to be guided in a manner such that these are adequately covered. This allows the interviewer to obtain respondents' points of view, reflections, and observations in a specific area.

Structured interview

Refers to a data collection technique in which the researcher uses a specific format, order, language and number of pre-determined questions to obtain respondents' points of view, reflections and observations in a specific area.

Themes

The principal descriptor used to encapsulate the meaning of data in this research.

Unstructured Interview

Refers to a data collection technique where the researcher does not have any particular set of questions and/or suggestions to guide the interview process. Conversations with the research participants are not directed and the conversations drive the interview.

Vocational Registration

Refers to the process required for medical practitioners in Australia to be registered with the Medical Board of Australia before they can practice medicine. Vocational registration also notes the medical specialty for which the medical practitioner is registered.

List of Abbreviations

ABS	Australian Bureau of Statistics
ACRRM	Australian College of Rural and Remote Medicine
AFP	Australian Family Physician
AGPT	Australian General Practice Training Program
AMA	Australian Medical Association
AMGs	Australian Medical Graduates
BMJ	British Medical Journal
CDMP	Career Decision Making Profile
GP / GPs	General Practice / General Practitioners
GPET	General Practice Education and Training Ltd.
GPRA	General Practice Registrars Australia Pty. Ltd.
IMGs	International Medical Graduates
MBTI	Myer's Briggs Type Indicator
MJA	Medical Journal of Australia
MTRP	Medical Training Review Panel
OECD	Organisation for Economic Co-operation and Development
RACGP	Royal Australian College of General Practitioners
RAISEC	Realistic, Investigative, Artistic, Social, Enterprising and Conventional (Holland's typologies for conceptualising personalities and work environments).
UGPA	United General Practice Australia

1 Introduction

1.1 Chapter Overview

This chapter provides the raison d'etre for the research, and, in particular, highlights the policy and research context of the study. In sections 1.2, 1.3 and 1.4, an overview of the policy background is provided, and the key issues around General Practitioner (GP) workforce shortages in Australia are noted (Australian Government Productivity Commission 2005; Health Workforce Australia 2012b; Australian Institute of Health and Welfare 2014). These workforce shortages are of particular concern within general practice (Health Workforce Australia 2012b), and in light of increased future community demand for health services due to a growing and ageing population (Goss 2008). Sections 1.5 and 1.6 outline the key objectives and the significance of this particular research, which is the first inter-generational qualitative study of decision factors impacting choice of specialty within the context of general practice. Section 1.7 outlines the key ethical considerations of this research, and is followed by a brief summary of the chapter.

1.2 Research Background

The Australian primary care landscape is changing both with respect to the patient population and the workforce. In particular, the population is rapidly ageing (Weston, Qu, and Soriano 2001), and this will not only put new pressures on the healthcare system as a whole, but will rapidly increase the demand for services (Goss 2008). A study conducted in 2005 (Australian Federal Government 2006), showed that in the previous ten years, there had been a 59.3% reduction in the number of general practitioners under the age of 35 years, bringing the number down from 6,104 to 2,387. Since then, there have been some improvements, with increases to GP training numbers. However, the recent review of the health workforce still suggests a future shortage of GPs, indicating that until 2025, the current reliance on overseas trained doctors is set to continue (Health Workforce Australia 2012b; Mason 2013).

Some theories behind these steep declines are associated with the lower pay rates (Wilcock 2007; Weyden 2003) of GPs compared to other specialised fields, and with the changing demographics of the GP population (Skinner 2006). Over recent years, the reliance on overseas trained doctors has also increased, and at present, over 35% of the General Practice workforce is overseas trained (Health Workforce Australia 2012a), a trend that began a decade ago (Australian Medical Council 17 August 2006). Environmental factors such as perceived government control over medical issues and finances have fostered a negative perception of the general practice profession amongst Australian medical students (Ward, Kamien, and Vernon 2000).

Some of the critical areas that are impacting the declining GP workforce are:

- Low remuneration and lack of prestige in general practice (Weyden 2003);
- Retirement of the current GP workforce (Joyce, McNeil, and Stoelwinder 2006; Woods 2007);
- Health care policies that have been introduced by the government which are perceived as transforming the face of general practice from that of quality health care based on the needs of individual people to that of a 'value for money' system (Lewis et al. 2000);
- The increasing accessibility of knowledge and information technology, which is seen as transforming the relationships between GPs and their patients (Chew 2003);
- Work-life balance considerations and the increasing role they play in the career decision making of medical students. It has been found that general practice training can sometimes be limited in accommodating the personal and professional needs of potential registrars, thereby making it less attractive to pursue as a profession (Ward, Kamien, and Vernon 2000).

But positive aspects are also seen to impact GP career choice. More women than men have been found to enter the GP profession, with positive lifestyle and gender influences emerging as important factors in their final career choice (Ward, Kamien,

and Vernon 2000). Positive lifestyle factors, including autonomy, income and job flexibility, are some of the key driving forces in career decision making amongst medical graduates (Skinner 2006).

Skinner (2006) also highlights lifestyle differences between baby boomers and generations X and Y as contributing factors. Generation X members, for example, have been said to possess a strong need for independence, flexibility, and autonomy in the workplace, which influences how and why they may choose certain types of careers (Yrle, Hartman, and Payne 2005). Those in Generation Y, on the other hand, have been said to be motivated by personal growth, and are unlikely to hold the same job in an organisation for life (Turetsky 2006). With a desire for developing transferable skills (Turetsky 2006), the Generation Y group are remarkably different to their predecessors, and have different constructs for making career choices.

General practice is not the first choice for a majority of the medical graduates; every year for the past ten years, less than a third have entered the GP workforce (General Practice Education & Training 2013). If Australia is to have a sustainable and affordable health workforce into the future, 50% of all medical graduates are needed to enter generalist specialties such as General Practice (Woods 2007; UGPA 2013). In recent years, there has been a sharp increase in the number of medical student numbers, which has bolstered local production of medical graduates; however, their career aspirations are unclear. In the current context, Australia continues to rely on a substantial overseas trained workforce to fill GP shortages and, unless there are major changes, this trend will continue into the future. It should be noted that GP training positions in Australia have historically been set by the commonwealth through the Department of Health who funds the GP training program. These positions have gradually increased over the years rising from 1200 per annum in 2014 to 1,500 per annum in 2015 (GPET 2013). It should be noted that the annual number of training positions available for AGPT are always set by the Department of Health. Whilst these training positions have been filled in recent years, the number of IMGS in the AGPT has remained high at over 30% (GPET 2012)

with a continued need to grow AMG applicants into the training program. Hence, in order to have a sustainable Australian trained workforce it remains important to maintain strong local interest in general practice training.

There are strong economic and health equity arguments for a focus on increasing the number of GPs, and this should be a key priority in workforce planning and future funding for medical training. This view is supported by the recent review of health workforce programs (Mason 2013), and the findings of Health Workforce Australia's recent report looking at workforce projections for 2025 (Health Workforce Australia, 2012a).

This research explores the range of personal, professional and social factors that lead to doctors choosing a career in general practice, and, in particular, examines decision drivers for medical students, junior doctors, GP registrars and practising GPs. Notably, this research studies career decision factors in an intergenerational context and considers more than a forty-year span of decision influencers and key factors as to why individuals have chosen a career in general practice. If the mix of decision variables that enhance the attraction and retention of doctors in general practice can be determined (within the context of the generational changes), then future health workforce policy can be strengthened to support these variables, thereby delivering a sustainable GP workforce for Australia.

1.3 Background: Community Context

Australian communities have undergone considerable change in population size and composition over the last thirty years. Significant advances in health and continued high standards of living mean that Australians enjoy one of the highest life expectancies in the world – 79.9 years for males and 84.3 years for females (ABS 2012b) . However, demographic trends of an ageing population and lower birth rates, which are mirrored in many other developed countries, mean that the mix of services required by society, and the ways in which they are funded and delivered, will not be the same in the future, as in the past.

The Australian Bureau of Statistics has reported demographic trends in Australia (ABS 2012a). In 2012, people aged 65 years and over made up 14% of Australia's population. This is projected to increase to 22% in 2061, and to 25% in 2101. The proportion of people aged less than 15 years is projected to decrease from 19% in 2012 to 17% in 2061, and to 16% in 2101 (ABS 2012a).

Australia's ageing population is expected to increase the number of people requiring specialist disability services, aged care and/or high-end health care at a rate outstripping the demand generated by population growth. Goss (2008) explains that population ageing is a major driver of anticipated demand for both health and welfare services and associated expenditure. The ageing population will, in fact, be responsible for a greater share (23 %) of the projected increase in total expenditure on health and residential aged care over the period 2003–2033, as compared to population growth (21%)(Goss 2008).

This changing patient profile will place new demands on the primary care workforce. In the coming years, patients will be more likely to suffer from more than one chronic illness (Roxon 2007), and are more likely to need co-ordinated, continuous care, with greater patient expectations of quality healthcare (i.e. accessibility and affordability) (Chew 2003). In order to best meet this array of needs, a healthcare system incorporating and promoting aspects of first contact, comprehensiveness, continuity and coordination of patient care is critical (Starfield 1999). General Practitioners are well suited to provide this level of healthcare.

By 2026, Australia's population is projected to grow to 27.237 million, which means that within the next thirteen years there will be an increase of 4.207 million people (an 18.3% increase of the current population) (ABS 2013). This rapid growth will place large demands upon health care provision, especially at the community level. As depicted in Figure 1.1, by 2042, over 22% of the population will be over the age of 65 (ABS 2012a), and this will put a big strain on primary care health services, of

which general practice is the foundation. The demand for health services is projected to increase for a variety of reasons in addition to population growth in future years.

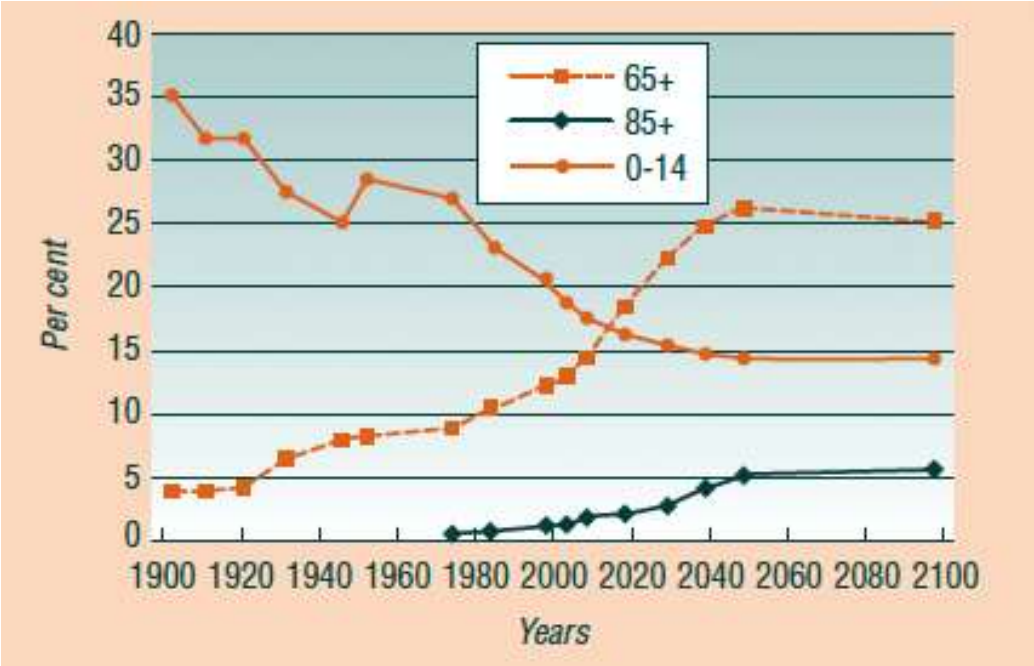


Figure 1.1 Decline of under-fifteens and increase of over sixty-fives and over eighty-fives in Australian population. Source: Australian Institute of Family Studies (Weston, Qu, and Soriano 2001).

Increased burden of chronic disease, greater consumer expectations, an ageing population and a treatment and funding model that has been built around short-term acute interventions will all add to the demand for health services into the future. The increasing prevalence of chronic disease has implications not only for the number of health workers required in the future, but also the skill mix and models of care required. General practice is the frontline of access to the healthcare system, and will come under increasing pressure as the demand for services increases over the next three decades.

As a rapidly growing OECD (The Organisation for Economic Co-operation and Development) country, which has committed itself to quality primary health care interventions, Australia is heading towards a major quality-of-life challenge. Developing and maintaining a strong GP workforce will be critical to ensure that Australia can meet the needs of the community. Attracting and retaining the next generation of doctors in general practice remains an essential part of future health

workforce planning, and hence, the need for better understanding the key decision drivers that attract doctors to this particular medical specialty.

1.4 Background: Workforce Context

General practice training in Australia has direct commonwealth control and oversight through the funding and oversight of the Australian General Practice Training Program (AGPT). In 2014, the AGPT increased its new training positions to 1,200 per annum and this jumped to 1,500 per annum in 2015. This represents a doubling of training place availability achieved over the five years since 2008. Despite this increase in GP training numbers, a subsequent strategic review has shown that Australia still has a shortage of GPs, which will continue into the future (Health Workforce Australia 2012b).

For a number of years, key industry groups have advocated for substantial increases in GP training numbers, proposing a target of 1700 – 1800 per annum (UGPA 2013), and this has been endorsed by the recent commonwealth review of health workforce programs (Mason 2013). An understanding of what attracts people to these posts is critical to ensure that Australia can meet these expansion targets with appropriate people.

Table 1, compiled from AGPT and medical training review data (General Practice Education & Training 2013; Health 2014), compares recent and anticipated medical graduate numbers with AGPT places on offer. As of 2014, AGPT places will peak at 1,200 offered per annum. Australian medical graduate numbers will continue to grow until 2017, and, according to current market-driven trends, are projected to increase into the next decade.

Extrapolating from table 1.1, it becomes clear that, despite the numerical increase in number of GP trainees, the percentage of GP training spots in comparison to the number of medical graduates is well below the 50% target (e. g. in 2008, AGPT places represented 28% of all graduate numbers, and from 2014 onwards, this will have only grown to accommodate 32% of all graduates). Commonwealth and State

governments agreed to the expansion of medical education numbers on the grounds that general practice would be the major beneficiary of this large increase (AMA 2013). However, the ratio of medical graduates to AGPT places will have actually reduced from 3.6 in 2008, to 3.2 in 2017, suggesting that the expansion in training numbers is not targeted at general practice.

Table 1.1 Five-year projection of numbers of medical graduates

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
AMGs	1738	1915	2259	2507	2807	2999	3176	3206	3206	3194
IMGs	401	465	474	457	511	557	535	571	636	638
Total	**2139**	**2380**	**2733**	**2964**	**3318**	**3556**	**3711**	**3777**	**3842**	**3832**
Per Annum No. Growth		**241**	**353**	**231**	**354**	**238**	**155**	**66**	**65**	**-10**
Per Annum % Growth		11%	15%	8%	12%	7%	4%	2%	2%	0%
2008-2017 No. Growth										**1693**
2008-2017 % Growth										**79%**
	Actual	*Actual*	*Actual*	*Actual*	*Projected*	*Projected*	*Projected*	*Projected*	*Projected*	*Projected*
AGPT Places	**600**	**675**	**700**	**900**	**1000**	**1100**	**1200**	**1200**	**1200**	**1200**
Per Annum Growth		13%	4%	29%	11%	10%	9%	0%	0%	0%
Graduates Per AGPT Place	**3.6**	**3.5**	**3.9**	**3.3**	**3.3**	**3.2**	**3.1**	**3.1**	**3.2**	**3.2**
% relation to AMGs	*35%*	*35%*	*31%*	*36%*	*36%*	*37%*	*38%*	*37%*	*37%*	*38%*
% relation to total graduates	*28%*	*28%*	*26%*	*30%*	*30%*	*31%*	*32%*	*32%*	*31%*	*31%*

Notes

(a) **Actual Numbers - From MTRP 16th Report, Feb 2013 at Table D8, page 187**
(b) **Projected Numbers - From MTRP 16th Report, Feb 2013 at Table 2.21, page 37**

With the annual cohort of Australian medical graduates expanding to 3,556 per annum (Health 2014), there is a strong need to increase GP training numbers and to ensure an attractive pathway for graduates to follow (Health Workforce Australia 2012a). However due to the length of the vocational training pathways, these interventions levers can take many years to have an effect; therefore, prompt action is needed.

According to Health Workforce Australia (2012a), 'the existing workforce position assessment was that the GP workforce is in shortage. The comparison scenario indicates there will be no change to this position if recent trends in supply and

expressed demand continue.' Even assuming current reform actions (see below), there is likely to be an ongoing shortage of GPs beyond 2025.

The Australian government is faced with an ageing GP population and a looming workforce shortage, with 40 per cent of the current GP workforce aged 50 years and older (Australian Federal Government 2006). This situation is further impacted upon by the high levels of stress, low morale, decreasing incomes and problems with time pressures reported amongst GPs (Hartwig and Nichols 2000; Del Mar, Freeman, and Weel 2003; Weyden 2003). These broad issues, though noted a number of years ago, continue to be relevant over time (General Practice Education & Training 2013).

Australian health policy needs to be targeted such that there is an active push to increase the attractiveness of the career (Kamien and Cameron 2006) and retention (Joyce, McNeil, and Stoelwinder 2006) of the new and existing GP workforce.
In terms of absolute numbers, Australia needs more Australian Medical Graduates (AMGs) to *choose* general practice, and the Mason review advises a further expansion of GP training numbers from 1200 to 1800 (Mason 2013). This will require that more than 50% of the current graduating cohort of medical graduates from Australian universities will choose to enter GP training. Historically, this demand has always been substantially lower; it has been in the range of 24-34% over the last decade (General Practice Education & Training 2013).

Australia has historically attracted a large number of international health professionals, and, in comparison to other OECD countries, continues to have a high level of dependence on overseas trained doctors (Buchan, Naccarella, and Brooks 2011). According to the recent Health Workforce Australia report (2012), in 2009, overseas trained doctors still comprised over 25% of the workforce, with over 4,600 visas granted to medical practitioners in 2009-10 (3,190 temporary and 1,551 permanent). The vast majority of these visas continue to be in generalist disciplines. In comparison, only 2,380 medical students graduated from Australian universities in that year. The federal government has recognised the need to expand the

domestic medical workforce, and there has been a noteworthy increase in the number of graduating medical professionals in recent years.

Given the shortages of medical doctors, the federal government has gradually increased the number of medical universities over the last decade. These universities are now starting to produce AMGs in larger quantities than ever before, and this will peak at 3,556 graduates per annum from 2014 onwards (Health 2014). However, the reliance on overseas doctors is set to continue into the future, so that even in 2025, Australia will still continue to experience shortages of doctors, and, in particular, general practitioners (Health Workforce Australia 2012b).

For Australia to attract an additional 15-20 % of graduating medical students to become general practitioners in the future is not going to be an easy task. Choosing any career is a complex process (Gati et al. 2010), but medicine, in particular, offers a raft of opposing and differing career choices (General Practice Education & Training 2007). To get more than half the future graduating cohort into the specialty of general practice would require careful understanding of the decision process and key drivers of what makes general practice attractive. This is the focus of this research.

1.5 Research Focus: Question and Objectives

The ideal conception of a GP has been defined as,
"A specialist trained to work in the front line of a healthcare system and to take the initial steps to provide care for any health problem(s) that patients may have . . . [who] takes care of individuals in a society, irrespective of the patient's type of disease or other personal and social characteristics, and organises the resources available in the healthcare system to the best advantage of the patients". (Olesen, Dickinson, and Hjortdahl 2000)

Traditionally, GPs have been seen as the entry point to the healthcare system, possessing broad-based expertise dealing with the vast range of health and

illnesses. Recent reforms are transforming this ideal into one that GPs feel is undermining their professional expertise and clinical, social and economic autonomy (Lewis et al. 2000).

The purpose of this research is to explore key decision factors that influence individuals to choose general practice as their medical specialty. The research will explore the career attitudes and decision variables across medical students, junior doctors, GP registrars and practising GPs, to better understand key drivers for attraction and retention in careers in General Practice.

The proposed research is largely exploratory in nature, and the aim is to analyse perceptions, describe experiences and offer insights. The principal aim of this study is to explore and compare the motivational and career choice factors amongst current and potential future entrants into the AGPT.
In order to ascertain this, the study will

1. Explore and compare perceptions related to the range of personal, professional and social factors that medical students, pre-vocational doctors, GP Registrars and GPs consider when choosing their specialty;

2. Identify whether there are any patterns in 'when' and 'how' this choice of specialty is made;

3. Provide a richer understanding of the experiences and decision factors that drive career choices in general practice in Australia.

1.6 Significance

General practice training in Australia continues to have direct Commonwealth control and oversight, and 2015 marks the fourteenth anniversary of the most significant Commonwealth Government action to date in restructuring GP vocational training (Final Report of the Ministerial Review of General Practice Training 1998). This report led to the establishment in 2001 of General Practice Education and Training Limited (GPET) as the regulatory body for the delivery of the Australian General Practice Training Program (AGPT). The report outlined that a

regionally administered program would require training to occur in regional settings providing a GP workforce. It is worth noting that the step to establish GPET was taken, notionally, to correct the perceived imbalance in the geographic distribution of GP registrars between urban, regional and rural settings whilst the training program was being administered by the RACGP. With such substantial direct Commonwealth funding of general practice (GP), it is important to look across the sector to determine the interest in GP careers amongst current and future cohorts.

More recently, further changes were announced in the 2014-2015 federal budget, which once again change the GP training environment in the biggest reform of the GP training landscape since 2001. The centrepiece of this reform resulted in the peak body in charge of administering GP training (GPET Ltd) being abolished as of 31st December 2014 with all of its functions absorbed into the commonwealth Department of Health (DoH). The regional training provider network, which is responsible for the actual delivery of the AGPT, has also been reconfigured. As a result of this reconfiguration, the total number of providers has been reduced from 17 to 9, and these new regional training organisations will take effect from 1st January 2016. The peak GP advocacy groups such as the GPRA, GPSA, RACGP, ACRRM have raised concerns regarding this reform, suggesting that the quality of GP training will suffer, with training being administered by health department bureaucrats (Smith 2014). In response, the federal minister for health has established an expert national training advisory committee, which includes representation from the peak advocacy groups as per above. This advisory committee will set the policy direction for the future of the AGPT, and will be led by an independent chair (Smith 2015). As this new training structure and framework is established, the findings of this study become even more important to ensure that expected policy changes do not undermine recruitment and retention into general practice into the future.

The current literature addressing the reasons behind the decline of new medical graduates entering general practice is largely limited. Whilst there have been a

number of research studies aiming to quantify demographic changes in the GP population in Australia (Brooks, Lapsley, and Butt 2003; Kamien 2004; Charles 2004; Kamien and Cameron 2006; Skinner 2006), the reasons behind this phenomenon must be explored in order to gain an understanding of what needs to be done to increase enthusiasm for general practice. Given the ageing GP workforce, it is critical to implement a wide range of changes that will make general practice attractive to future doctors entering the field of medicine (Australian Medical Workforce Advisory Committee 2005b). If this fails to occur, it will cause the continued decline of Australia's primary health industry due to the decrease in supply of high-quality primary care providers (Woods 2007).

Recent Commonwealth reports (Health Workforce Australia 2012b; Mason 2013) and industry peak bodies (UGPA 2013) are advocating strongly for a rapid increase in GP training numbers to bolster Australia's GP workforce to meet community needs into the future. The number of medical graduates has increased significantly in recent years (Health 2014), but the uptake of General Practice has been lower than desired for the last decade (General Practice Education & Training 2013). Medical career choices involve an extremely complex process (General Practice Education & Training 2007), and it is important to have a clear understanding of decision drivers that favour a general practice career endpoint.

Sampson (2011) suggests that the lack of focus in professional literature on the cost-effectiveness of career-guidance interventions is an issue needing to be addressed since it creates a disconnect with policy makers who fund these interventions. This research will allow for a richer understanding of the experiences and motivational factors that drive career choices in General Practice in Australia, thereby allowing for improvements in the training environment regarding selection, educational content, context and processes. A better understanding of motivational and career choice markers, coupled with career choice satisfaction amongst GPs, will help to drive policy that can enhance workplace and lifestyle issues, improving the attractiveness of the profession within Australia.

This is the first qualitative research of its kind to look at career decision factors in an intergenerational context. By including medical students, junior doctors, GP registrars and practising GPs, the research covers more than a forty-year span of decision influencers and key factors as to why individuals have picked general practice. This allows for a unique insight as to what factors have remained common across the years, and what are new emerging factors that are impacting the current generation of medical students. This research will allow for a rich cross-generational view of attraction and retention factors for general practice. Future health policy should strengthen the time-tested factors that are supported across the cohorts, and leverage the emerging factors to ensure a robust interest in general practice careers into the future. The issue around "when" and "how" medical students make their choice of specialty is of particular importance to policy setters since it allows them to position intervention strategies, in the form of GP promotion programs, to create the best impact. This research will also provide a valuable contribution to the body of knowledge governing vocational specialisation factors for medical students and pre-vocational doctors, which could also be of significance to other medical specialties facing similar workforce shortages. Certain social and personal factors may well provide an insight across non-medical disciplines in the context of making career choices, and may even point to marketing strategies for key target groups likely to pursue GP as a profession.

The majority of the current research in this context is based on surveys and questionnaires asking participants about career choice and factors affecting this choice (Thistlewaite et al. 2008). A detailed review of the literature (refer chapter 2.5) on current research related to GP recruitment and retention revealed that there is limited evidence in qualitative research into medical career choices in the Australian context. The main research in this area was conducted in the United States of America over a decade ago (Bland, Meurer, and Maldonado 1995; Campos-Outcalt et al. 1995), and represents obvious gaps given vast differences to the Australian context (e.g. in America, the choice of specialty is determined at the graduate school level, as opposed to Australia, where the choice is made during the

hospital years). Many studies conducted overseas (Curran et al. 2004) and within Australia (McDonald, Bibby, and Caroll 2002), have tended to have a 'rural' flavour over recent years, and the primary focus has been on retention and attraction of rural doctors, rather than to General Practice per se. Many of the current studies have focussed more on the impact of existing incentives and retention strategies, without exploring the other factors that influence, or could influence, the decision process. However, the United Kingdom and Canada have done interesting studies in the last decade that shed some light on the Australian situation (Gill et al. 2012; Morra, Regehr, and Ginsburg 2009; Grayson, Newton, and Thompson 2013), and this research will provide an important comparative point in the international context.

As such, the current research will cover new territory in an important area of workforce shortage in primary healthcare in the Australia context, and will provide a richer insight to career decision factors amongst the new generation of doctors. Lastly, whilst the research is primarily looking at General Practice as the specialty endpoint, there will be significant learning for other disciplines within medicine that are facing similar workforce shortages. The research design itself could easily be replicated to gain a targeted insight into any particular medical specialty, or even across other professions such as engineering, law and economics, where there are numerous sub-specialties/domains to choose from.

1.7 Ethical Considerations

This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 138/2008). The following terms outline the main ethical issues governing the research. These terms should be seen as indicating minimum risk, with the understanding that the highest standards of ethical practice would be maintained at all times, in line with Curtin University's ethical guidelines.

- **AARE Guidelines**: The researcher has abided by the ethical considerations in relation to research, as proposed by Australian Association for Research in Education (AARE).
- **Information:** The research participants were given an information sheet outlining the research, and no subversive techniques were used to gather information.
- **Confidentiality and Permission:** The participants were asked to provide written or verbal consent to participate, and their names were de-identified.
- **Results:** On completion, the participants will be sent a summary copy of the results.

1.7.1 Conflicts of interest

At the time of data collection, the principal researcher was the Chief Executive Officer of General Practice Registrars Australia Ltd (GPRA), the peak national representative body for GP Registrars. Therefore, the researcher may have been known to some of the participants due to his involvement in the media and his role in the GPRA. This was flagged as a potential conflict at the start of the research process since it had the potential to create some perception of power imbalance during the interview process, although the researcher had no decision-making authority over registrars' training.

Careful consideration was given to this, and it was noted that such an imbalance was unlikely to occur since the GPRA is mainly a support and advocacy organisation for GP Registrars, and is in no way responsible for any aspect of their training. Furthermore, GPRA is a non-profit organisation, and membership is entirely voluntary and completely free.

However, in order to ensure that there were no concerns, and that participants did not feel obliged in any way to participate in the research, a number of mitigation strategies were employed:

- It was made very clear to participants that the researcher was acting in the role of a research student from Curtin University, and he was careful not to present himself in his occupational role.
- The researcher downplayed his role as the CEO, and did not mention it unless it came up in conversation.
- Information sheets were provided outlining the research process and seeking voluntary participation.
- Clear consent was obtained from the participants, who were advised that they could withdraw from the research at any point.

1.8 Chapter Summary

This chapter has established the context, objective and significance of this research study and seeks to provide a unique perspective on the broad issues related to GP workforce shortages (Australian Institute of Health and Welfare 2014; Health Workforce Australia 2012a; Commonwealth of Australia April 2013). The continued demand for general-practice-related health services (Goss 2008) due to changing population demographics (ABS 2012a, 2013) is also outlined. A brief overview of some of the issues related to GP workforce shortages has been provided (Skinner 2006; Brooks et al. 2002; Del Mar, Freeman, and Weel 2003) as well as an outline regarding the progression of the Medical Graduate (MTRP 2013) and General Practitioner(General Practice Education & Training 2013) pipeline. In particular, the importance of this particular study was highlighted as the first major academic work looking at the intergenerational variances in key factors impacting choice of medical specialty amongst Australian doctors across the last forty years. The chapter has concluded with a consideration of the ethical issues related to this research.

2 Literature Review

2.1 Chapter Overview

This chapter provides a comprehensive review of the literature related to this research. Section 2.2 provides a brief overview of how the research process was undertaken. The use of search engines, search terms and their relevance in the context of the study are discussed. An outline is also provided delineating how certain aspects of the wider literature relate to this particular study and explaining why they have been included.

Section 2.3 tracks the history of the literature related to decision theory (Hansson 1994; Tennyson et al. 1997; Joslyn 2000) and looks at key decision constructs that relate to this study, including normative decision theory (Peterson 2009), rational decision theory (Scott 2000; Oppenheimer 2008), sequential and non-sequential decision models (Dewey [1910] 1978; Mintzberg, Raisinghani, and Théorêt 1976) and the psychology of reasoning (Wason and Johnson-Laird 1972; Johnson-Laird and Byrne 2002). The decision process is explored as a complex cognitive process linked to preferences and beliefs (Kahneman and Tversky 1984; Doya and Shadlen 2013) related to how people make decisions.

Section 2.4 explores the literature related to career theory, and looks at areas that relate to the career choice phenomenon within the context of this study. In particular, the trait and factor theory (Parsons 1909), vocational developmental models (Ginzberg et al. 1951), vocational choice theory (Holland 1962), developmental self-concept theory (Super 1969), social learning theory (Krumboltz 1976), theory of work adjustment (Dawis and Lofquist 1984), social cognitive theory (Bandura 1999) and the theory of planned happenstance (Krumboltz 2009) are explored. The process by which individuals make career decisions (Gottfredson 1981), decision-making styles (Phillips and Strohmer 1982; Harren 1979) and decision-making profiles (Gati and Asher 2000) are also considered, as are generational issues (Zemke, Raines, and Filipczak 2000) within the context of work-

life balance (Gursoy, Maier, and Chi 2008) and personality/job fit (Cennamo and Gardner 2008).

Section 2.5 provides a comprehensive analysis of the related medical workforce literature. The discussion is broken down across broad domains related to personal, professional and social factors that influence choice of specialty, and is followed by a narrative on the findings of other key studies regarding issues related to prestige (Petchey, Williams, and Baker 1997; Creed, Searle, and Rogers 2010), remuneration (Grayson, Newton, and Thompson 2013), gender (Buddeberg-Fischer et al. 2006; Diderichsen et al. 2013), work-life balance (Larkins et al. 2004; Newton, Grayson, and Thompson 2005), role models (Kamien 2004), clinical rotations (Tolhurst and Stewart 2005) and other clinical (Senf, Campos-Outcalt, and Kutob 2005; Gaspar, Jesus, and Cruz 2011) factors that impact choice of specialty.

Each section also includes an introduction and summary of the related issues, and the chapter concludes with a broad summary of all preceding sections.

2.2 The Review Process

In qualitative studies, the literature review is an evolutionary process, and usually requires going back to the literature to explore themes as the data collection and analysis progresses (Creswell 2003; Denzin and Lincoln 2003). Whilst looking at the decision factors that influence choice of specialty for medical students, junior doctors, GP registrars and practising GPs, it became apparent that it was necessary to first look at some of the key aspects of the decision-making and career-choice process itself.

The literature review for this process was broken up into several main aspects. The first step involved understanding the nature and background of the decision process itself. To afford a better understanding of the decision process within the context of the current research, a careful review of decision theory and an understanding of how people make decisions in general were required. The literature review was

conducted via reviewing some key books (Dewey [1910] 1978; Manktelow 2012; Wason and Johnson-Laird 1972; Tennyson et al. 1997) and referring to online databases (ProQuest, PsycINFO). The online search included search terms such as “decision theory”, “decision factors” and “decision choices”. While a multitude of literature was found on these topics, focus was placed on seminal pieces of work (Condorcet 1793; Homans 1958; Whale and Boyle 1966; Wason and Johnson-Laird 1972), key theoretical concepts (Mintzberg, Raisinghani, and Théorêt 1976; Scott 2000) and the decision-making process (Keller 1989) within the context of the study.

The next step of the literature review required a better understanding of career theory and an understanding of the models used by individuals in relation to career choices. Within the context of the current research, the individuals had already made a broad career choice in the field of medicine; however, there are great complexities in translating that broader choice into an actual specialty, and, in fact, the various specialties can offer differing career pathways (General Practice Education & Training 2007). Some key books (Schein 1993; Parsons 1909; Ginzberg et al. 1951; Jung et al. 1971) were reviewed and online searches across databases (ProQuest, PsycINFO) were conducted. The search terms included “career theory” and “career choices”. There was a myriad of literature available, but focus was placed on understanding the key concepts and summarising the key theories (refer table 2.1).

As this study has sought to understand the generational differences of the participants, who were in notably different stages of their career and personal life, literature related to generational attitudes towards career development (Lankard 1995; Filipczak 1994), job satisfaction (Thomas 2002; Kunreuther 2003), leadership (Yu and Miller 2005; Harris 2007) and remuneration (Turetsky 2006; Shaul 2007) were also considered. Some key books were reviewed (Zemke, Raines, and Filipczak 2000; Lancaster and Stillman 2002), and a broad electronic search was conducted using terms such as “generation x, y, z” combined with “remuneration”, “job satisfaction”, “motivation”. As gender had also been tabled as a potential decision-

influencing factor during the familiarisation study, a brief overview of the literature related to gender differences in career choices was also explored (Flabbi 2011; Heiligers 2012). The search term “career choice and gender” was used for this particular review. Again, the focus was primarily to understand and explain the key issues in these areas to aid the study.

The researcher also considered game theory (Morgenstern 1944) but this is mainly used in the study of mathematical models (Myerson 1991) and the field of economics and political science (Rasmusen 2006) and not career decision making. It was noted that decision theory and career theory were more commonly used in literature in relation to career choices and choice of medical specialty. Similarly, constructivism was also considered but the researcher noted that this is widely acknowledged as a learning theory (Fosnot 2005) and has been more widely used in the context of learning theories and teaching methods in education rather than career decision-making. The broader literature review pointed towards career theory and decision theory as being most relevant to this research and hence these were used as the key theories related to this research and are discussed in detail.

The final step of the literature review involved an exhaustive review of other related research within Australian and international contexts that had looked at career choices and decision-making within the broad context of general practice. An exhaustive review of over 5000 articles was carried out with the help of a research assistant. The research was conducted entirely online, and used key industry databases (MEDLINE, PubMed) as well as specific medical journals in the UK (*British Medical Journal*) and Australia (*Medical Journal of Australia*). The search terms included variations and combinations of the following terms: “General Practice”, “Family Medicine”, and “Career Choice”. Country-specific searches using the above variables were also included for Australia, UK, New Zealand, Canada and the USA.

The articles collected were reviewed and entered into a table (Appendix 1). These were further were broken into specific areas for discussion in relation to prestige

(Petchey, Williams, and Baker 1997; Creed, Searle, and Rogers 2010), remuneration (Grayson, Newton, and Thompson 2013), gender (Buddeberg-Fischer et al. 2006; Diderichsen et al. 2013), work-life balance (Larkins et al. 2004; Newton, Grayson, and Thompson 2005), role models (Kamien 2004), clinical rotations (Tolhurst and Stewart 2005) and other clinical (Senf, Campos-Outcalt, and Kutob 2005; Gaspar, Jesus, and Cruz 2011) factors that impact choice of specialty.

Given the context of this research, the steps outlined above were not part of a linear process, but rather were a part of an iterative exercise that involved going back and forth multiple times to associate relevant literature within the context of the current study. Often, new readings in one area triggered additional readings in another area, and it should be noted that what is presented below is the culmination of the entire process. So whilst the following topics are represented in a linear fashion, this is purely to aid synthesis by the reader, and it encapsulates the richness of a true qualitative study where every step of the methodology has a constructivist foundation as defined by key thought leaders in the field of qualitative research (Denzin and Lincoln 2003; Janesick 2000; Strauss and Corbin 1990; Creswell 1998, 2003).

2.3 Decision Theory

Decision-making is a not a continuous activity, but it is the most common and natural activity for a human being (White 2009). Decision theory has been actively developed since the middle of the twentieth century, but it has been in existence for much longer. The history of decision theory is said to have three broad stages, beginning with the “old period” in ancient Greece, which acknowledged the concept of decision-making. This was followed by the “pioneering period” in the mid-sixteenth century, when the concept of maximizing expected value was first introduced (Peterson 2009). Modern decision theory largely sits in the twentieth century, when the concept of probability (Ramsey, 1931, as cited by Petersen, 2009) and game theory (Neumann & Morgenstern, 1947, as cited by Petersen, 2009) first came into existence.

Modern decision theory has become an interdisciplinary field of study, encompassing areas such as economy, psychology, philosophy, mathematics and statistics (Kahneman and Tversky 1984; Bell, Raiffa, and Tversky 1988). In its simplest form, decision theory is a theory about making decisions, a study of strategies for choosing between options involving different risks or expectations of gain or loss linked to an outcome (Peterson 2009; White 2009; Joslyn 2000; Bell, Raiffa, and Tversky 1988).

The field of decision theory itself is not a unified field, and can have very diverse aspects (Hansson 1994). It focuses on how people make non-random choices when faced with a number of alternatives. For instance, decision theory studies human goal-directed behaviour in the presence of options and in light of their possible consequences (Hansson 1994; Joslyn 2000). The second half of the twentieth century saw a gradual recognition of the complex nature of decisions, the broader impact of the environment (Tennyson et al. 1997) and the traits of the decision-maker (Chang 2000; Cannon 1996). Tennyson (1997) argued that human decision-making is not simply the product of an individual's internal cognitive process, but the outcome of interactive functional operations, including both internal and external factors from diverse sources (Tennyson et al. 1997). These factors include attributes characterising the specific decision-maker, the type of decision task, and the environments where decisions are made (Cannon 1996).

Aspects of decision theory can have strong mathematical implications in relation to options and statistics. Many seminal pieces of work in this area deal with these statistical elements of the decision theory (White 2009; Peterson 2009). The broader domain of decision theory includes a vast area of research, including things such as probability, multi-criteria decision making, decision matrices, game theory, social choice theory, etc. (Bell, Raiffa, and Tversky 1988). However, for the purpose of this research, focus has been on the less-technical aspects of decision theory since this better fits the context of the current research.

Broadly, decision theories can be divided in two groups: normative and descriptive (Peterson 2009; Bell, Raiffa, and Tversky 1988; Hansson 1994). Normative decision theories are associated with how decisions should be made (Peterson 2009) if a hypothetical, infinitely intelligent being were to make such decisions. They identify logically compelling properties with which decision behaviour should conform, thereby guaranteeing the rationality of the decision-making process. Normative decision theories are therefore simpler than descriptive or prescriptive decision theories because they do not need to take into account factors such as errors, forgetting, and the variability of intelligence and experience between decision-makers (Grant and Zandt 2008; Einhorn and Hogarth 1981).

Although a normative decision theory is associated with how decisions should be made in order to be rational, norms of rationality are not the only norms regularly applied in decision-making. After all, decision-making is typically done by humans, and rational choice is not always the primary driver. The manner in which decisions are actually made is the broad domain of descriptive decision theories (Peterson 2009; Bell, Raiffa, and Tversky 1988).

In a practical, day-to-day sense, normative decision theory only enters the picture after ethical or political norms have been fixed (Hansson 1994). This infers that normative decision theory does not apply to *why* a decision is made, but rather to *how*. If a medical student decides that she wants to be a surgeon because her father was a surgeon, then normative decision theory can provide a mechanism for achieving this goal. It does not, however, offer guidance as to whether this is a good decision to begin with. Since people do not behave consistently regarding axioms and norms, the manner in which decisions are actually made must be studied, taking that reality into account. It is in this context that descriptive decision theories arise. They deal not with how people should behave so that optimal decisions are made, but with how normal, flawed human beings make their decisions (Hansson 1994; Klein et al. 1993; Peterson 2009). Research under this branch of decision-making, has often compared real people's choices with normative models.

Within the context of this study, the key issues related to decision theory that would be applicable for medical students, junior doctors, registrars and practising GPs when making the decision related to choice of specialty were examined. For those who had pre-determined that they wanted to choose a particular specialty, the normative models applied to some extent. However, there were a number of individuals participating in the study who did not have any pre-conceived ideas about which specialty in medicine they wanted to choose. These individuals were better suited to descriptive decision models.

The concept of transitivity (Keller 1989) has been said to apply to both normative and descriptive models of decision theory. Transitivity occurs when one element is related to a second element and the second element is related to a third element. By virtue of this relationship, the first element is also related to the third element. This is common in mathematical relationships whereby if A > B and B > C then it can be inferred that A > C. In reference to decision theory this concept would infer that a person's preference between alternative actions must be transitive (Keller 1989). However, when it comes to personal preferences, individuals often violate the transitivity principle in the way in which they make their preferences, demonstrating that logic cannot always explain decision choices (Keller 1989; Hansson 1994). For example, an individual may believe that money is more important than prestige, and that prestige is more important than flexibility. For the transitivity principle to apply, money in this example would be more important than flexibility. However, in the context of human preferences, this logic may not explain decisions, and, in this example, an individual may still consider flexibility to be more important than money. This was an important aspect to consider when evaluating the decision process of the current cohort since it was noted that, in fact, the transitivity principle did not apply at all.

Joslyn (2000) suggests that decision theory can be applied to situations of certainty, uncertainty and risk. He argues that decision under certainty means that each option leads to only one consequence, and a choice between alternatives is equivalent to a choice between consequences. In decision under risk, each

alternative will have one of a number of possible consequences, and the probability for each consequence to occur is known. Therefore, each option is associated with a probability distribution, and a choice among probability distributions. When the probability distributions are not known, one talks about decision under uncertainty (Joslyn 2000).

Bell et al. (1988) postulate that decision theory is not concerned with defining objectives, designing the alternatives or identifying the consequences; these are usually considered as having been previously determined. They argue that decision theory offers simple procedures for choice when the alternatives and their corresponding consequences are already known (Bell, Raiffa, and Tversky 1988). Joslyn (2000) proposes that in a situation of decision under certainty, the decision-maker's preferences are simulated by a single or multi-attribute value function that introduces ordering to the set of consequences, therefore ranking the alternatives. He claims that in situations of risk, decision theory is based on the concept of utility. In this context, utility is the measure of the desirability of the consequences of each possible course of action. The decision-maker's preferences for mutually exclusive consequences of an alternative are described by a utility function that allows for the calculation of the expected utility for each alternative. The one with the highest expected utility is considered the most favourable (Joslyn 2000). The utility argument does resonate with some of the issues that came up in this study, since desirability of the various attributes identified by the participants played a part in the overall decision process.

One of the more contemporary descriptive theories is the naturalistic theory, which investigates decisions that concern people in the real world and the factors that affect them (Klein et al. 1993). This is substantially different from decisions that are studied by the normative theories in laboratory tasks, which often involve complex mathematical equations. This interpretation of the decision process underlines the role of experience and personal competence. The naturalists attribute eight factors to any important decision in one's personal, academic, professional, or social life: the decision involves relevant and ill-structured problems; it occurs in uncertain and

dynamic environments; it proposes shifting, ill-defined, or competing goals; it generates multiple event-feedback loops; it is performed with time constraints; it involves high stakes; it allows the participation of multiple players; and there are organisational norms and goals that must be balanced against the decision-makers' personal choice (Lizárraga, Baquedano, and Cardelle-Elawar 2007; Klein et al. 1993). It was discovered that this particular theory was relevant to this research but did not fully address the range of issues impacting on the decision process such as biometric factors, gender nuances, origin and as part of the decision process. Furthermore there were no organisational norms and goals that were relevant to the decision process but rather the environment.

Keller (1989) argues that the differences between the normative and descriptive decision theories lead to prescriptive approaches to decision-making. He explains that prescriptive models are concerned with identifying the methods for helping people to make the best possible decisions. These decision models are based on normative theories that specify an optimal set of decision rules and aim at bridging the gap between the descriptive observation that people do not always make optimal decisions and the normative observation that people ought to make optimal decisions at all times (Keller 1989). This suggests that these models be developed in the future to aid young medical professionals in the decision process.

2.3.1 Rational decision theory

Rational decision theory proposes a framework for understanding and formally modelling social and economic behaviour. Oppenheimer (2008) suggests that Thomas Hobbes' *Leviathan* defined the foundation elements of this theory as early as 1651, which has since been built upon by a number of theorists. The work in modern rational choice theory stems largely from the work of George Homans (Homans 1958), which set the basic framework of exchange theory (Vanderwyst 1975). Exchange theory considers social behaviour as, predominantly, an exchange of goods, whereby relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives (Homans 1958, 1981). Over recent

decades, rational choice theorists have become increasingly mathematical in orientation, converging with the trends in microeconomics (Scott 2000).

Basic to all forms of rational choice theory is the assumption that complex social phenomena can be explained in terms of the elementary individual actions of which they are composed (Scott 2000). Rational choice theorists (Satz and Ferejohn 1994) often presume that the individual decision-making unit in question is "representative" of some larger group (e.g. buyers of a particular product). Scott (2000) argues that people make decisions about how they should act by comparing the cost/benefit relationships of all the available courses of action. Although models applied in rational choice theory are diverse, Scott suggests that all of them assume that when faced with a decisional situation, individuals will choose the best action according to unchanging and stable preferences, taking into account all relevant factors that are beyond their control (Scott 2000).

In rational choice theory, individual preferences are said to comply with the following axioms: (1) the individual faces a known set of alternatives; (2) all alternatives from which one chooses are comparable, and individuals form judgements as to whether one is better than another, or whether they are equally good (axiom of completeness); (3) the preferences are transitive; and (4) any alternative is as good as itself (Oppenheimer 2008). Genuine rational choice theories are concerned exclusively with social (or group) outcomes, rather than individual outcomes. Nonetheless, rational choice theory has gained influence and visibility in the last decade in many of the social sciences and in related disciplines such as philosophy and law (Hechter and Kanazawa 1997).

In undertaking this particular research, it was important to give due consideration to rational choice theory since it assumes that humans make rational decisions that can be modelled. If correct, the theory would have major implications for predicting career choice for future medical students and junior doctors. However a number of scholars have argued against this theory (Andrews 2000; Pfouts, Hirsch, and Hunt 1976), suggesting that this theory is too simplistic and does not explain what a

rational person will do in a particular situation (Bourdieu 2005), and, after careful consideration, it was concluded that this theory was unable to explain the context of decision factors that influence choice of specialty for doctors. However, this theory does lend itself to a better understanding of key decision theory concepts and leads to the discussion on sequential and non-sequential decision models of rational choice.

2.3.2 Sequential and non-sequential decision models

Different decision theorists have proposed different sets of stages for making decisions, such that the decision process can be analysed as being linear or circular, depending on the sequence of stages considered (Hansson 1994).

John Dewey is credited (Hansson 1994) with formulating the first modern sequential decision-making strategy (Dewey [1910] 1978). In his work, Dewey ([1910] 1978) proposed a logical sequence of events by which one can make rational decisions work (Hansson 1994), and suggested that rationality and practise are strictly related domains (Frega 2010). According to Dewey, rational decisions involve the following steps: (1) identifying a problem or a need, (2) defining the characteristics of that difficulty, (3) suggesting possible solutions, (4) evaluating the suggested solutions and their consequences, and (5) further observing and experimenting, with the final acceptance or rejection of the suggestion (Hansson 1994). It is argued (Whale and Boyle 1966) that these steps allow for the objective examination of facts and trends describing a situation, whilst taking into account the facts and trends indicating possible things an individual needs to arrive at a conclusion about which action represents the best solution.

Later, Herbert Simon adapted Dewey's list of stages, making it fit for the context of decisions in organisations (Simon [1960]1977). Simon's model (1977) consists of three phases: the identifying phase, the design phase and the choice phase. The identifying phase involves finding and formulating the problem or situation that calls for a decision. In the design phase, the decision-maker identifies alternative courses of action to solve the problem. In the choice phase, the decision-maker analyses the

alternatives he or she developed and chooses one of them. The end product is a decision that can be implemented and carried out (Kirs 2007; Simon 2000). Herbert Simon, however, was not a defender of the concept of perfect rationality. He introduced the concept of "bounded rationality" (Simon 2000), and suggested that the complexity of the environment and humans' limited cognitive system made them have only a bounded rationality (Simon 2000; Hatchuel 2001; Kalantari 2010). This means people are simply not able to evaluate all the available options, and they do not carry out a complete cost-benefit analysis of the possible options. Simon (2000) maintains that people merely satisfy their personal criteria, and he infers that any alternative that meets these criteria is considered to be a satisfactory alternative and, therefore, will be the chosen alternative (Campitelli and Gobet 2010). This theory of bounded rationality established the grounds for a decision-making process comprising three simple stages: finding occasions for making a decision, finding possible courses of action, and choosing one from a number of possible courses of action (Hansson 1994).

The concept of the sequential steps for decision-making (Dewey [1910] 1978; Simon [1960]1977) was later questioned by Eberhard Witte, who suggested that the "stages" of decision-making are not exactly consecutive, but rather simultaneous (Witte, Joost, and Thimm 1972). Witte criticised the idea that decision processes are generally divided into consecutive stages, and proposed that these stages are performed in parallel rather than in sequence. Witte (1972) conducted a series of experiments that led him to propose that decision-making is a multi-operational, multi-temporal process that does not have only one final decision, but consists of a plurality of sub decisions; the maximum number of these choices appears by the end of the process. Furthermore, the procedures of information gathering, alternative developing and alternative evaluation do occur; however, they do not happen consecutively in distinct phases in time, but are distributed over the full duration of the process (Witte, Joost, and Thimm 1972).

Mintzberg et al. (1976) agreed with Witte's concept of parallel decision-making, and proposed a non-sequential model of decision-making that uses the same three

major phases as Simon's models. Their central framework resembled Simon's three phase approach ([1960] 1977) to decision making, although the three phases were described using the terms "identification", "development" and "selection" (Mintzberg, Raisinghani, and Théorêt 1976).

Mintzberg et al. (1976) postulated that the "identification" phase is comprised of two steps: decision recognition, in which the issue is recognised and triggers decisional activity; and diagnosis, in which one seeks to understand the evoking stimuli and determine cause-effect relationships for the decision stimulation. The "development" phase leads to the formulation of one or more solutions to the problem at hand. This phase also includes two steps: a search function, to find ready-made solutions, followed by a design function, to find new solutions or customise the ready-made ones. Finally, the "selection" phase consists of a further three steps: the screening step, in which one eliminates the infeasible ready-made alternatives; the evaluation-choice step, in which one makes a choice among the alternatives; and the authorisation step, required when the implementation of the selected solutions depends upon hierarchical approval (Hansson 1994; Mintzberg, Raisinghani, and Théorêt 1976). Mintzberg et al. (1976), in particular, argued that the relation between these phases and steps is circular rather than linear. They postulated that the decision-maker might cycle between the phases to understand the issue, and, even if no proper solution is found, the decision-maker may cycle back to an earlier phase till an outcome is achieved.

The genesis of non-sequential decision-making, as postulated by Mintzberg et al. (1976), is critical for the current research. Medical career choice has been the subject of much discussion, and has been noted to be a complex process (General Practice Education & Training 2007). Therefore, it is posited that non-sequential decision-making theories provide a sound basis for considering and understanding this complex process. However, to fully appreciate this, it is important to understand how individuals evaluate a range of complex and sometimes unrelated variables as part of this non-sequential decision process. This leads to a broader

discussion about psychology and reasoning, which helps us to better understand how current and future cohorts in medicine approach career decision-making.

2.3.3 Psychology of reasoning

The psychology of reasoning is the study of how people reason and, consequently, solve problems and make decisions (Leighton and Sternberg 2004; Manktelow and Chung 2004). This particular area of research stems largely from the work of Peter Wason (Wason and Johnson-Laird 1972), which has since been further developed by a number of researchers (Manktelow and Chung 2004; Manktelow 2012; Johnson-Laird and Byrne 2002). Wason's (1972) work essentially demonstrated that people are better able to test a conditional proposition that contains sensible content; as opposed to a conditional proposition that has symbolic content.

Whilst the concept of psychology of reasoning can be difficult to investigate, a number of mathematical theories can be adapted and used as the normative standards for good reasoning, thus allowing for the development of empirical methods of psychological research aimed at assessing how well humans reason (Chater and Oaksford 2001). This has led to the identification of a dissonance between observed behaviour and normative theories, putting the concept of human rationality into doubt (Chater and Oaksford 2001). The concept of human rationality, however, was resurrected by Johnson-Laird (1983) and his development of the mental models theory (Johnson-Laird and Byrne 1994; Johnson-Laird and Byrne 2002; Johnson-Laird 2013). The mental models theory states that reasoning involves constructing mental models of the circumstances described in the premises at hand, and that people rely on those representations to make decisions (Johnson-Laird and Byrne 1994). The natural extension of this discussion is to acknowledge that because human imagination is not without fault, people sometimes fail to choose the rational alternative (Chater and Oaksford 2001).

Johnston-Laird's more recent work on conditionals postulates that the model theory of conditionals rests on five assumptions, in addition to those of the original theory

of mental models, and includes the principle of truth (Johnson-Laird and Byrne 2002).

2.3.4 Decision making: A complex cognitive process

Decision-making has historically been treated as a cognitive function that results in the selection of one course of action from among several different alternatives. In fact, almost any other cognitive process can be considered a decision, because once the function admits flexibility, contingency or a provisional plan, it embraces elements of deliberation and commitment (Doya and Shadlen 2013).

Due to its cognitive nature, the decision-making process is one that we often conduct unconsciously, although in continuous interaction with the environment. At another level, it might be regarded as a problem-solving activity, which comes to a conclusion when a suitable solution is found. However, psychological factors come in to play as well, since individual decisions are done in the context of each person's preferences, values and needs (Einhorn and Hogarth 1981; Kahneman and Tversky 1984). Like any other process, decision-making can be described in terms of a set of sequential stages. Different decision theories have been presented throughout the years, and decision-making has therefore been depicted as having several different stages. Condorcet was one of the first philosophers and mathematicians to be concerned about the definition of a set of stages for group decision-making, which involved a reduction of the number of alternatives, thereby simplifying the actual choice that follows (Condorcet 1793).

Whilst normative and descriptive decision theories usually form different fields of study, there is some common ground, including the impact of beliefs and desires on the decision process (Peterson 2009). Peterson (2009) acknowledges that, regardless of the broad field of normative and descriptive decision theories, ultimately most decisions are somehow triggered by beliefs and desires. Under the normative paradigm, the subject has a clear belief that the outcome is the rational outcome desired, and the aim is a well-defined object. Similarly, under the

descriptive paradigm, the actions of the decision-maker can be described in relation to the context of the environment and other relevant factors.

There are several other theories of reasoning that try to give meaning to the cognitive processes upon which human reasoning is based. For example, connectionist approaches towards reasoning, which suggest human cognition can be linked to artificial neural networks (Sun 1994), have also been proposed. One of these views offers the mental logic theory, which claims that people reason by applying inference schemas (Yang et al. 2005). Another view is that people compute probabilities, an approach that helps to explain why everyday reasoning is highly successful, whilst human reasoning applied to laboratory tasks tends to fail (Chater and Oaksford 2001).

Peterson (2009), in particular, discusses the concept that decisions can be rational without being right, and that they can be right without being rational. This rests on the implication that the individual making the decisions often does not have the benefit of hindsight, and can often find it impossible to foresee the result until the decision has already been made. When this is coupled with the concept of beliefs and desires (Kahneman and Tversky 1984) driving decision-making, it can be argued that descriptive theories, which study how people make decisions, are perhaps more suited to explaining human behaviour.

Broadly, these theories point towards the concept of human decision-making as a complex process that is often conducted unconsciously, but is ultimately informed by our preferences, values and beliefs (Kahneman and Tversky 1984), experiences (Einhorn and Hogarth 1981), mental models (Johnson-Laird and Byrne 1994) and environment (Cannon 1996).

Cannon (1996) proposes a three-part model of decision-making and argues that psychological research on real-world situations of decision-making should specify the features of the decision task, the environments, and the decision-maker engaged in the particular research setting. Chang (2000) takes this further and proposes a transactional model for complex decision-making that includes the

interaction between the decision-maker and the task within the context of the environment. An exploration of these decision concepts in some depth, followed by an extensive review of the literature related to career theory (refer section 2.4), led to the conclusion that Chang's (2000) transactional process of decision making best explains the decision process that medical students, pre-vocational doctors, GP registrars and practising GPs utilised to make their career decisions. The following model (fig. 2.1), which incorporates the internal traits of the decision-maker, the influence of the environment, the impact of lived experiences and the broader context of professional preferences, describes the decision process that doctors go through in selecting their choice of specialty.

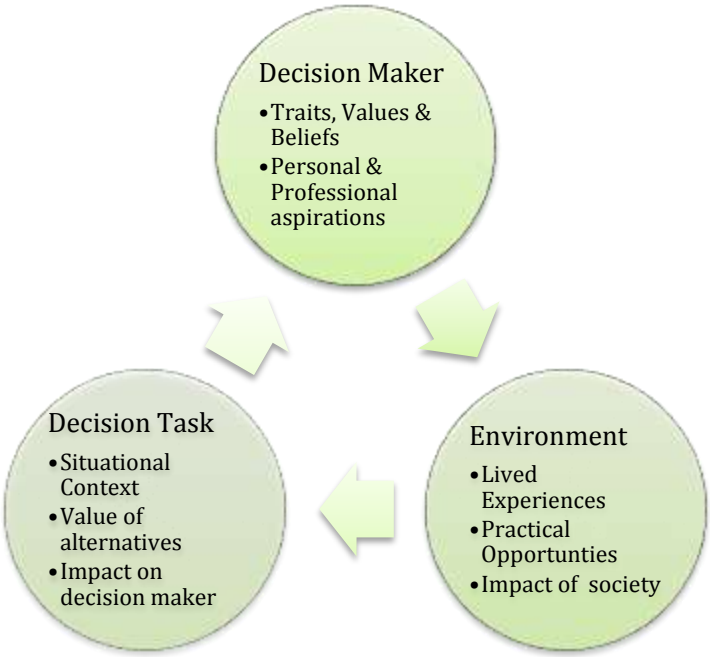


Figure 2.1 Researcher's proposed model for describing the decision-making process of doctors choosing specialty. Adapted from "Transactional process model of complex dynamic decision making" (Chang 2000).

Understanding the implications of these theories ensures a deeper understanding of the subject matter, and has allowed for an appreciation of the decision factors that determine choice of medical specialty amongst medical students, pre-vocational doctors, general practice registrars and general practitioners (i.e. those who are the focus of this research).

2.4 Career Theory

2.4.1 Section overview

This section provides a brief historical overview of how key elements of the career theory literature have evolved since the early work of Frank Parsons (1909), which focused on individual traits, to more recent work (Krumboltz 1999), which incorporates the complex interaction of the environment and planned and unplanned incidents. This overview will be followed in section 2.4.3 by an analysis of the literature on how people make decisions and decision models and styles. The impact of gender and generational differences related to career choice and satisfaction is explored in sections 2.4.4 and 2.4.5, respectively. Overall, this section seeks to provide a solid understanding of key concepts related to decision factors that influence choice of specialty for medical students, pre-vocational doctors, registrars and practising GPs. Key outcomes and understandings from this research, which are further explored in the analysis of the data in chapter 5, have their theoretical foundations in this section.

2.4.2 Evolution of career theory

The concept of a career has been defined as the "evolving sequence of a person's work experiences over a period of time" (Arthur, Hall, and Lawrence 1989). Like many aspects of human behaviour, career choices are somewhat of a mystery for many. How individuals go through the process of such an intricate, and often risky, decision is a complex issue (Patton and McMahon 2006). Career choices define most of our lives and, even though there are numerous theories and models, no single one is sufficient to describe the broad field of career choice (Careernz 2013).

The development of career choice theories began in the early twentieth century with Frank Parsons (Parsons 1909). Parsons is credited with being the founder of vocational guidance, and his work has had a profound impact on career theory and practice (Patton and McMahon 2006). According to Parsons (1909), the three elements of a successful career choice are self-knowledge, knowledge of the world of work, and a solid reasoning of the relationships between these two factors. He

suggested that it was possible to measure individual talents and attributes required in particular jobs, and hence, match people to an occupation to improve productivity. For much of the twentieth century, career counsellors relied heavily on Parson's approach when trying to increase people's understanding of the work world (Patton and McMahon 2006; Arthur, Hall, and Lawrence 1989).

In the 1950s, John Holland set out his own theory of vocational choices. Holland postulated that occupational preferences are a reflection of underlying personality types (Holland 1962). To this day, Holland's theory is one of the most popular career theories in the world, owing much to its simplicity and feasibility (Athanasou 2008). Holland (1962) suggested that people's personalities and work environments can be conceptualised into six typologies: Realistic, Investigative, Artistic, Social, Enterprising and Conventional (RAISEC). Behaviour is the result of an interaction between the personality and the environment, meaning that people seek out careers that are compatible with their attitudes and values, and which allow them to use their skills and abilities. For example, Artistic persons are more likely to be successful and satisfied if they choose a job that is carried out in an artistic environment such as working as a dance teacher in a dancing school (Patton and McMahon 2006).

Ginzberg et al. (1951) have been credited with the conception of the first formal vocational development model, which was broadly a general theory of occupational choice (Phillips & Pazienza, 1988; Osipow, 1973). They define occupational choice, as an irreversible process comprised of numerous compromises, and explain that there are three periods, from childhood through young adulthood, in which occupational decision-making can be analysed. These periods are referred to as fantasy, tentative, and realistic. The fantasy period occurs before age 11, when children believe they can become anything. This is followed by the tentative period (ages 11-17), during which consideration is given to the child's interests and abilities to help bring a degree of reality to the choices. The realistic period starts from 17 years and carries through to young adulthood, during which individuals make a

series of compromises regarding subjective qualities and environmental factors to arrive at an occupational choice (Ginzberg et al. 1951).

Donald Super did not fully agree with the model of Ginzberg et al. (Farrar 2009) and proposed one of the most universally accepted theories of career decision-making, which came to be known as the developmental self-concept theory (Super 1969). Super suggested that career choice and development is essentially an evolutionary process of developing and implementing a person's self-concept, and involves sequences of choices and compromises. He argued that people choose occupations that permit them to express their self-concepts. Super is also credited with introducing the notion that career decision-making is a process that spans one's entire lifetime, moving through five stages: growth, exploration, establishment, maintenance and disengagement (Luzzo and Severy 2008). Super (1969) emphasised the determinant role of the self-concept throughout this process. He argued that the self-concept changes and develops throughout people's lives as a result of experience. As such, people successively refine their self-concept(s) over time, and this impacts on their career choice (Patton and McMahon 2006; Arthur, Hall, and Lawrence 1989).

Bandura (1986) also emphasised the impact of environment, postulating the social cognitive theory, which is based on the idea that people learn by observing others. He suggested that personal factors in the form of cognitive, affective, and biological events, behavioural patterns, and environmental events all operate as interacting determinants that influence one another (Bandura 1986, 1999). The concept of self-efficacy is the focal point of Bandura's social cognitive theory. He argues that self-efficacy beliefs are the most influential predictor of human behaviour, and ultimately drive career choice (Bandura 1989; Bandura 1986).

Career theories can be categorised under two broad headings: structural theories and developmental theories. Structural theories are usually content-driven and are related to each individual's personal and environmental constraints. Career choices

are said to be a result of intrinsic characteristics or external conditions (Parsons 1909; Holland 1962). Developmental theories, on the other hand, are process-driven, and are related to interaction and change over time. They are typically composed of a series of stages through which people pass (Super 1969).

Krumboltz (1976) was one of the first to bring the structural and developmental concepts together through the social learning theory on career decision-making, which describes the various factors that influence individual career decisions. He proposed that the key influential factors in relation to career decision are genetic endowment and special abilities, environmental conditions and events, and learning experiences, namely, instrumental learning experiences and associative learning experiences. He postulates that people form beliefs that represent their own reality as a result of the complex interaction of these four types of elements (Krumboltz 1976). These beliefs about themselves and the world of work influence their approach to learning new skills, and ultimately affect their aspirations and actions regarding their career (Gikopoulou 2008).

When Schein (1978) introduced the concept of career anchors, he presented a different perspective on how career decisions are made. According to him, each individual has only one true career anchor, which emerges after the person has accumulated a meaningful amount of life and work experience (Schein 1978). Schein (1978) initially identified five possible career anchor constructs: (1) autonomy/independence, (2) security/stability, (3) technical-functional competence, (4) general managerial competence, and (5) entrepreneurial creativity. An additional three constructs were added later: (6) service or dedication to a cause, (7) pure challenge, and (8) life style (Schein 1993; Schein 1996).

Through his work on career anchors, Schein describes how a stable career identity is formed, and distinguishes this process from initial vocational choice. According to Schein, when individuals achieve congruence between their career anchor and their work, they are more likely to attain positive career outcomes such as job

effectiveness, satisfaction and stability (Danziger, Rachman-Moore, and Valency 2008).

Dawis and Lofquist (1984) introduced the theory of work adjustment, which is one of the few theories in this area that focuses on career adjustment rather than choice (Yoo 1998; Harper and Shoffner 2004). According to this theory, the work adjustment is seen as the "continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with the work environment (Dawis and Lofquist 1984). In this theory, Dawis and Lofquist (1984) describe four adjustment styles (flexibility, activeness, reactiveness and perseverance) by which individuals tend to seek career satisfaction.

More recently, in the 1990s, Krumboltz developed another career theory (Mitchell, Levin, and Krumboltz 1999) that answers the current uncertainty around career management and the rapidly changing labour market. This theory, referred to as planned happenstance (Krumboltz 2009), recognises the fact that unpredictable social factors, chance events and environmental situations must be taken into account when it comes to career decision-making. This theory suggests that people should embrace unexpected opportunities for learning and growth, adopting a more flexible attitude towards change and unpredictability (Mitchell, Levin, and Krumboltz 2011). This theory offers a conceptual framework, extending career counselling to include the creation and transformation of unplanned events into opportunities for learning. The goal of a planned happenstance intervention is to assist clients to generate, recognise, and incorporate chance events into their career development (Mitchell, Levin, and Krumboltz 1999).

It is interesting to note that whilst career theory started with a structuralist approach based on internal traits and personality, it has rapidly evolved to acknowledge the impact of lived experiences, life events and other environmental factors. The interaction of these external factors with internal skills, traits, beliefs and desires, creates a complex matrix within which career choices are made.

The career theories described above have been carefully picked because of their direct relevance to the subject matter. Each theory has implications within the context of how choice of specialty is determined by medical students, junior doctors, registrars and practising GPs. The theories are also related to each other in some way and present a broad chronological overview of how career theory has evolved over the last fifty years. Table 2.1 provides a summary of these key theories.

Table 2.1 Overview of key career theories

Name of Theory	Researcher	Year	Type	Brief Description
Trait and Factor	Frank Parsons	1908	Structural	Operates under the premise that it is possible to measure both individual talents and the attributes required for particular jobs. Recognised as the first significant work in this field. Introduced the concept of matching individuals to roles to improve satisfaction and productivity. (Parsons 1909)
Vocational Developmental Model	Ginzberg et al.	1951	Structural	Essentially a general theory of occupational choice, defined as an irreversible process comprised of numerous compromises. Includes three periods (i.e. fantasy, tentative, and realistic) in which occupational decision-making could be analysed from childhood through young adulthood. (Ginzberg et al. 1951)
Theory of Vocational Choice	John Holland	1973	Structural	Suggests that behaviour is determined by an interaction between personality and environment. Occupational preferences are a reflection of underlying personality types in choosing a career. People prefer jobs where they can be around others who are like them. People's personalities and work environments can be conceptualised into six typologies: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. First theory to make a connection between work environments and preferences. (Holland 1962)
Developmental Self-Concept Theory	Donald Super	1969	Developmental	Most universally accepted theory. Posits that people choose occupations that permit them to express their self-concepts and that career choice is essentially a process of developing and implementing a person's self-concept. Introduced the concept of individuals evolving over time. Offers a clear framework for understanding various stages of development, and suggests that career development is a life-long process. (Super 1969)
Social Learning Theory	John Krumboltz	1976	Structural & Developmental	Describes the various factors that influence individual career decisions. Proposes that the key influential factors are genetic endowment and special abilities, environmental conditions and events, and learning experiences, namely, instrumental learning experiences and associative learning experiences. Learning is a cognitive process

Name of Theory	Researcher	Year	Type	Brief Description
				that occurs in a social context. Important for introducing the concept of interaction between personal cognitive factors, environmental conditions and learning experiences. (Krumboltz 1976)
Career Anchors	Edgar H. Schein	1978	Developmental	Introduces the concept of career anchors, which presents a different perspective on how career decisions are made. Each individual has only one true career anchor, which emerges after the person has accumulated a meaningful amount of life and work experience. (Schein 1978, 1993)
Theory of Work Adjustment	Lofquist & Dawis	1984	Developmental	Presents the process that enables a person to fit in to the work environment. Talks about four adjustment styles (flexibility, activeness, reactiveness and perseverance) by which individuals tend to seek satisfaction with their career. (Dawis and Lofquist 1984)
Social Cognitive Theory	Albert Bandura	1986	Developmental	Based on the idea that people learn by observing others, with the concept of self-efficacy serving as the focal point. Assumes self-efficacy beliefs to be the most influential predictor of human behaviour. Believes in an individual's capabilities to produce or attain, and provides a framework for understanding, predicting and changing human behaviour. (Bandura 1986, 1999; Bandura 1989)
Theory of Planned Happenstance	John Krumboltz	1999	Structural & Developmental	Recognises the fact that unpredictable social factors, chance events and environmental situations must be taken into account when it comes to career decision-making. Provides an interventionist approach to career counselling and suggests that individuals should allow their careers to include planned events that have the potential to turn into opportunities for learning. (Krumboltz 2009; Mitchell, Levin, and Krumboltz 1999; Mitchell, Levin, and Krumboltz 2011)

2.4.3 How do people make career decisions?

It is a widely recognised fact that different people use different criteria for making career choices (Athanasou 2008). Over the years, career guidance practitioners have used career theories to reduce complex vocational behaviours to more readily understood concepts that can be used as a schema to help practitioners select career guidance interventions to meet specific client needs (Sampson, Dozier, and Colvin 2011).

Decision-making models not only help to describe the way in which decisions are derived in the developmental process (i.e. the descriptive models), but they also prescribe how decisions should occur (i.e. prescriptive models), and together these models comprise the essence of decision theory (Gati and Asher 2000).

One of the early models for decision-making proposes a process of elimination-by-aspects to vocational decision-making (Tyversky 1972). This was later expanded into the PIC model (Gati & Asher, 2000), which outlines a three-stage process of reaching a decision: 1) Pre-screening, 2) In-depth exploration, and 3) Choice. The pre-screening stage allows the individual to narrow down the alternatives. This is followed by the in-depth exploration stage, during which alternatives are evaluated. During stage three, individuals choose from among the alternatives that are most satisfying to them (Gati & Asher, 2000).

Gottfredson's (1981,1996) developmental theory of circumscription and compromise has been recognised as important when considering decision models since it unites both theory and practice as it attempts to understand the reasons behind vocational choice (Farrar 2009). Gottfredson combines Super’s developmental stages and Holland's person-environment-fit theories to explain why some individuals make less than congruent choices, arguing that individuals will narrow down their choices in an attempt to express their self-concept in their occupational choice through a process of circumscription or reduction. She notes

that career choice satisfaction is reached when the individual's choice is congruent with his/her self-concept, as outlined by Holland (Gottfredson 1981, 1996).

Career decision-making models can describe how decisions are derived, but there are other factors that are related to decision-making that have been found to have implications for the decision process. This broader concept is referred to in the literature as “career decision-making style”, and is the term used to describe the way people collect, perceive and process information throughout their career-decision process (Farrar 2009). Career decision-making styles depict a number of factors associated with career decision-making (Farrar 2009).

Decision-making styles within the context of career choices have been explored by a number of theorists (Phillips and Strohmer 1982). They have been construed as stable personality traits or situational-related behaviour strategies used in decision-making situations (Phillips and Strohmer 1982). Johnson (1978) had previously identified four unique styles of decision-making: two data gathering styles (spontaneous and systematic) and two data analysing styles (internal vs. external). He argued that none of the decision-making styles are better or worse than the others, but are merely portrayals of human behaviour (Johnson 1978). Key to Johnson's findings is that each of these styles is seen as independent, and the way in which a person gathers data does not construe how the person will analyse it (Farrar 2009).

In 1979, Harren proposed the following three styles: (1) the rational style, characterised by an ability to recognise the future consequences of the decisions; (2) the intuitive style, which involves little anticipation and information-seeking behaviour; and (3) the dependent style, in which the individual is strongly influenced by the opinions and expectations of others (Harren 1979). Harren is also credited with creating a measurement scale, the Assessment of Career Decision Making (ACDM), which has been widely used (Phillips and Strohmer 1982).

Walsh (1987) proposed a different construct with two dimensions: thinking-feeling and introvert-extrovert. The thinking-feeling dimension characterised the degree of individual preference for a systematic or haphazard approach to career decision-making tasks. The introvert-extrovert dimension described the extent to which an individual relied upon the internal self or external others in the identification of problems, gathering of information, and generating and evaluating alternatives in the decision-making process (Walsh 1987).
Each decision-making style is associated with a different approach to making career decisions, which, in turn, is defined by a distinct set of attitudes and behaviours. These specific decision-making styles typically focus on the individual's most dominant traits and describe career decision-making as a habit-based propensity to react in a certain way in the specific decision context (Gati et al. 2010).

In recent years, career development and career counselling have increasingly been informed by concepts emanating from the constructivist worldview (McMahon 2005). In particular, for the past decade, the importance credited to individual variation in decision-making has grown significantly (Gati et al. 2010).

The abundance of career decision-making styles attests to researchers' awareness of a variety of characteristics that can be used to describe an individual's decision-making style. Krumboltz (1976) suggests that the reasons behind why people make certain career decisions, search for specific jobs, and seek promotions depends on what they believe about themselves and the world of work. His later work on the Career Beliefs Inventory (CBI) provides a targeted approach to career counselling to assist people in identifying those underlying beliefs and assumptions that may limit their career choices (Krumboltz et al. 1994)

Holland's RAISEC model (Holland 1962) particularly stresses the importance of personality in career decision-making. Miller (2005) analyses Holland's personality types in relation to decision-making styles and argues that Realistic, Investigative, and Conventional types may respond well to more rational approaches to decision-

making and should be encouraged to examine each occupational choice carefully and gather as much specific data as they can. On the other hand, Artistic, Social, and Enterprising types respond better to less-rational approaches to decision-making, and should be encouraged to spontaneously choose an occupation, while collecting and analysing information (Miller and Miller 2005).

Similar to Holland's (1962) RAISEC model, the Myers-Briggs Type Indicator (MBTI), based on the work of Carl Jung (Jung 1953), is another personality instrument that establishes links between personality types and career fit. The six components of Jung's work (1953) are based on how we take in information (sensing [S]/ intuition [N]), how we make decisions (thinking [T]/feeling [F]), and whether we derive our energy from the external or internal world (extraversion [E]/introversion [I]). Katherine Briggs and Isabel Briggs Myers, introduced two more components to Jung's theory, how we organise our lives (judging [J]/perceiving [P]), and they designed and developed the MBTI personality instrument (Blackford 2010).

The MBTI is one of the most universally used measures of "well person" personality types available today (Sample 2004). According to MBTI theory, an individual's personality structure develops from four basic preferences, each providing two alternative choices, resulting in sixteen personality type categories (Bayne 1995).

The common idea in Holland's theory of vocational personalities, Schein's theory of career anchors, and Myers-Briggs' type theory is that people tend to have differential preferences for certain modes of coping and developing, which they have to exercise in order to do well and feel well in their work and life situation (Nordvik 1996).

Some researchers have further argued that, in addition to their primary decision-making style, individuals also have a secondary style (Gati et al. 2010). Gati et al. (2010) expand the concept of decision-making styles and propose the concept of career decision-making profiles. They argue that these profiles offer a

multidimensional profile characterisation of individuals' career decision-making processes based on a simultaneous consideration of eleven dimensions. The term "profile" takes into account the complexity of the process, as well as the possible influence of not only personal but also situational factors. The following, adapted from Gati et al. (2010), is a brief overview of the eleven dimensions which are part of the career decision-making process (CDMP):

- *Information gathering* (comprehensive vs. minimal): the degree to which individuals are thorough in collecting and organising information.
- *Information processing* (analytic vs. holistic): the degree to which individuals analyse information into its components and process the information according to these components.
- *Locus of control* (internal vs. external): the degree to which individuals believe that they control their occupational future and feel that their decisions affect their career opportunities.
- *Effort invested* in the process (much vs. little): the amount of time and effort individuals invest in the decision-making process.
- *Procrastination* (high vs. low): the degree to which individuals avoid or delay beginning or advancing through the career decision-making process.
- *Speed of making the final decision* (fast vs. slow): the length of time individuals need to make their final decision once the information has been collected and compiled.
- *Consulting with others* (frequent vs. rare): the extent to which individuals consult with others during the various stages of the decision process.
- *Dependence on others* (high vs. low): the degree to which individuals expect others to make the decision for them as opposed to accepting full responsibility for making their decision.

- *Desire to please others* (high vs. low): the degree to which individuals attempt to satisfy the expectations of significant others (e.g. parents, partner, friends).
- *Aspiration for an ideal occupation* (high vs. low): the extent to which individuals strive for an occupation that is perfect for them.
- *Willingness to compromise* (much vs. little): the extent to which individuals are willing to be flexible about their preferred alternative when they encounter difficulties in actualising it.

The above CDMP process has been described as one of the most comprehensive tools for evaluating the decision-making process, since it captures a vast variety of decision-making approaches that are used by individuals as opposed to presenting just the dominant style (Ginevra et al. 2012).

In summary, career decision-making has been broadly acknowledged as the process of searching, comparing and choosing a career-related alternative (Gati and Asher 2000). A review of this process outlines the progression of various decision models (Tyversky 1972; Gottfredson 1981; Holland 1962; Krumboltz et al. 1994) and the evolution of decision styles (Harren 1979; Johnson 1978; Walsh 1987) over the years, which assists in gaining a better understanding of how decisions are made and how they should occur. More recent work by Gati et al. (2010) focuses on decision-making profiles via the development of the CDMP.

2.4.4 Gender differences in career choices

Opinion regarding the extent to which gender has an impact on aspects of career development has varied in the literature. Flabbi (2011) outlines that gender differentials in the labour market in most OECD countries reduced gradually during the 1970s and 1980s. However, this trend has since stopped, and the gender differences in education and labour market outcomes, though greatly reduced, have remained ubiquitous (Flabbi 2011).

Gender has been found to have an impact on various aspects of career development, with women often receiving fewer job opportunities, lower pay for similar work and fewer job advancements (Rodman 2010). Brown (1997) found gender to be statistically significant for career maturity, suggesting that women take longer or lag behind men in this regard (Brown 1997). Other researchers have also found significant gender-related differences in relation to career indecision, locus of control, and state and trait anxiety (Burns 1994). In his cross-national study on cultural differences in decision-making styles and self-efficacy, Mau (2000) also found statistically significant gender differences, reporting that female students endorsed the dependent style more than males, regardless of culture. However, the rational style was endorsed among most students, whether American or Taiwanese (Mau 2000). Gender also has a significant variation in the field of study, with women being the majority of graduates in Education, Humanities, and Health (Flabbi 2011). Farrar (2009), on the other hand, argues that the effect of gender upon a variety of career-related constructs is either weak or minor.

Becker (1975) proposed the human capital model, which posits that individuals choose the career that offers the highest future lifetime earnings stream. He suggests that women who anticipate having time out of the labour market (e.g. while raising children) are predicted to opt for jobs for which the financial penalty attached to such job interruptions is smaller. Other related attributes such as pleasant work environment, flexible hours and the ability to balance anticipated work and family commitments are also said to be important considerations (Becker 1976).

Sociologists who examine the processes by which individuals choose careers have focused primarily on later stages when individuals actually choose to enter jobs, rather than on the decisions to move into activities at earlier stages on the paths leading to specific careers. However, gender differences in the selection of activities that constrain occupational choices often occur earlier in life (Correll 2001). In their study examining the influence of gender and academic risk on the career decision-

making process of an adolescent population, Rojewski and Hill (1998) found that males reported greater problems in decision-making; they were more likely to feel discouraged, lack necessary information about careers, perceive external barriers, and lack interest in making choices (Rojewski and Hill 1998).

Several factors can help explain these differences in career choice between genders. Croson and Gneezy (2009) argue that women tend to be more risk-averse than men, which can lead women to jobs with lower mean, lower-variance salaries. They also suggest that the social preferences of women are more malleable than those of men and tend to be situation specific (Croson and Gneezy 2009). A number of studies also indicate that women's social preferences are more sensitive to subtle cues than are men's, which can lead to women choosing professions that they think are socially appropriate for their gender, based on the cues they observe about the workforce (Croson and Buchan 1999). Croson and Gneezy (2009) also suggest that women's preferences for competitive situations are lower than men's, which can lead women to choose professions with less competition.

McGillicuddy-DeLisi and DeLisi (2001) suggest that women persist in choosing jobs that conform to the cultural stereotype of female occupations. This is somewhat supported by the OCED data, which shows a higher concentration of females in certain types of professions (Flabbi 2011). Women dominate fields such as nursing, teaching and caring for young children, clerical positions, minor accounting jobs, ancillary health care workers and food services (McGillicuddy-DeLisi and DeLisi 2001). Correl (2001) argues that widely shared cultural beliefs about gender and task competence differentially bias how individual males and females evaluate their own competence for career-relevant tasks. As such, men and women tend to choose career paths that oblige what society perceives as befitting the categories of "men" and "women" (Correll 2001).

This broad discussion on gender influences on career choices has been particularly included because it has been a common topic in medical career choices (Heiligers

and Hingstman 2000; van der Horst et al. 2010; Heiligers 2012). However, it should be noted that this research looked at the impact of gender on the choice of specialty at the point of picking the specialty. The research does not explore the broader impact of gender after the choice of specialty has been made. This is considered further in section 2.5, in the context of gender-related research within the medical sector.

2.4.5 Generational differences in career choices

Much has been written and said about Baby Boomers, Generation X and Generation Y, and predictions are even being made regarding the newest (western) generation, Generation Z. The Baby Boomers were born between 1946 and 1964, and were fortunate enough to be brought up in an abundant, healthy, post-war economy. Thus, they are typically regarded as being an egocentric generation of individuals who grew up with the world revolving around them. Work is a defining part of their self-worth and their evaluation of others, and, for many, work is all they live for (Zemke, Raines, and Filipczak 2000; United Nations 2009).

Generation X refers to people born between 1965 and 1980. These individuals were raised in the shadow of the influential Boomer generation, watching their parents sacrifice greatly for their companies. This resulted in the development of behaviours of independence, resilience and adaptability, more so than in previous generations. As opposed to the Baby Boomers, those belonging to Generation X don't live to work, but rather work to live (United Nations 2009; Zemke, Raines, and Filipczak 2000).

The Y Generation refers to those born between 1981 and 2000. Members of Generation Y view families as a symbol of safety and security, but they have also been encouraged to make their own choices and even question authority. This group was raised in a consumer generation, and as such, they are characterised by an "expecting more" attitude and are not afraid of expressing their opinions. Generation Y is also distinctive in a very particular matter: they were the first to grow up with computers and the Internet as a big part of their lives. This has had a

profound impact on their approach to problem-solving, as well as on their networking, multiprocessing and global-minded skills (Zemke, Raines, and Filipczak 2000; United Nations 2009).

A review of the literature suggests that the older generation works best when there is personal contact, strong leadership and clear direction (DelVecchio 2009; Zemke, Raines, and Filipczak 2000). Baby Boomers typically value teamwork and discussion, as well as company commitment and loyalty. They view work from a process-oriented perspective. They seek long-term jobs and believe in sacrifice as a mean to obtain success (Jorgensen 2003). Baby Boomers may be more likely to pursue a more traditional career path, that is, one typified by ascension of the corporate ladder (DelVecchio 2009).

Jorgensen (2003) argues that members of Generation X are not interested in following in the footsteps of their parents, and aim at achieving a work-life balance that suits their needs. He suggests that watching their parents taught them that sacrifice does not guarantee stable family life or long-term employment. More than any other generation, they are much more likely to leave for a more challenging job, a higher salary and/or improved benefits such as flexible work schedules. Instead of climbing the corporate ladder, these individuals seem to want to explore and do different kinds of work in order to learn about themselves and to express their values (Brousseau et al. 1996).

Members of Generation Y are typically motivated to do well, but seek more meaning and direction to their work. They are not afraid to question authority and will challenge management decisions that they deem unreasonable (Jorgensen 2003). Generation Y has a highly entrepreneurial spirit and a good sense of responsibility, which makes them take matters (i.e. their own jobs) into their own hands (Martin 2005). These highly educated individuals are not afraid of change and are self-confident and optimistic about the future. Like Generation X, members of

this generation also make work-life balance one of their top priorities (Jorgensen 2003; Zemke, Raines, and Filipczak 2000).

2.4.5.1 *Generations in the workplace*

Several recent studies conducted in various parts of the world have concluded that work-life balance is one of the most important aspects of a career (Abendroth and den Dulk 2011; Naithani 2010; Burnett et al. 2010). It has also been noted that the distinctive views of the Baby Boomers, Generation X and Generation Y on work-life balance and how that affects their career choices are linked to their intrinsic characteristics and beliefs about the workplace and work ethics (Dries, Pepermans, and Kerpel 2008).

Lloyd and Bereznicki (1998) argue that the current generation will experience new challenges in planning their careers. They state that issues such as importance of lifetime learning, the impact of globalisation in many areas, more flexible working, changing expectations, increasing attention to the whole area of values, and a greater emphasis on personal development will make career decision a more complex process for future generations (Lloyd and Bereznicki 1998).

In what follows, particular aspects of generational differences within the context of the research are explored, including concepts of work-life balance, money, work aspirations and other related issues.

Work -life balance and flexibility

The Baby Boomers have been seen as the most competitive generation (McNamara 2005). It has been suggested that they have been able to make an impact in the societies in which they lived, making them idealistic and driven (Glass 2007). Since work and personal sacrifice are seen as directly related to financial success, Baby Boomers do not tend to place a high value on work-life balance, growth opportunities and positive relationships at the workplace (Beutell and Wittig-Berman 2008). For example, if a promotion is available, then Baby Boomers will

tend to take it and then figure out how it affects other aspects of their personal and professional life. Typically this generation has not valued or sought flexibility from work, and has typically put work before family or other commitments (Beutell and Wittig-Berman 2008).

Members of Generation X, on the other hand, are not as work-driven as their predecessors (Gursoy, Maier, and Chi 2008). They try hard to strike a good balance in their lives (Cennamo and Gardner 2008). For that reason, professions requiring overtime or varied shifts do not match up well with their desire to work steady shifts, avoid long hours, and keep work and personal lives separate. In addition, they have very low tolerance for bureaucracy and rules, especially regarding time and attendance (Dries, Pepermans, and Kerpel 2008). They tend to prefer companies that offer flexible schedules, independence, professional growth, mentors, interesting work and time off. They expect more from the company they work for such as free workout facilities, free childcare facilities, and free meals (Gursoy, Maier, and Chi 2008). Flexibility remains a key value for this generation as they strive to strike a balance between personal and work-related needs (Beutell and Wittig-Berman 2008; Thomas 2002).

Those that belong to Generation Y have very self-reliant and independent spirits, and they seek the freedom and the flexibility to get the task done in their own way, at their own pace (Martin 2005). They aspire for a work-life balance (Zemke, Raines, and Filipczak 2000) to achieve professional satisfaction and personal freedom (Sayers 2007). In fact, having the freedom to discover and apply methodologies to achieve their goals is one of the key essentials for Generation Y. They tend to like variety and flexibility and are looking for work places where they can move from one project to another, position-to-position, department-to-department, location-to-location (Cennamo and Gardner 2008). Generation Y has been noted to possess unwavering confidence, and they believe they possess the talent and intellect to achieve their goals; they are acutely focused on their own success (Ng, Schweitzer, and Lyons 2010).

Members of Generation Y will seek out opportunities where they can continue to learn marketable skills and gather experience that will serve them in the future as they move from high maintenance to high productivity (Clausing et al. 2003; Cennamo and Gardner 2008; Gursoy, Maier, and Chi 2008). This generation is now moving into the workforce and expect fulfilment and meaning in their work (Campbell et al. 2010). They also wish for reward through income growth and recognition of their contribution (Zemke, Raines, and Filipczak 2000). It has been argued that the traditional bounds of flexibility will truly be tested with the new generation as the internet and mobile computing are combined with their natural desire to have flexible work arrangements (Ng, Schweitzer, and Lyons 2010).

Broadly speaking, work–life balance and flexibility are fundamental values to both Generation X and Y, and are an important factor in relation to job choices (Zemke, Raines, and Filipczak 2000; Campbell et al. 2010). However, in comparison, Generation Y is likely to give these values more importance, even if doing so impacts career advancement (Terjesen, Vinnicombe, and Freeman 2007). Paradoxically, Generation Y will tend to have higher levels of education since they are more likely to negotiate their work terms throughout their careers, and are less likely to want to work overtime (Ng, Schweitzer, and Lyons 2010). However, they are less likely than the preceding generation to progress into leadership positions, as they value non-work activities more than Generation X (Zemke, Raines, and Filipczak 2000).

These clear distinctions in the generational differences in attitudes towards work-life balance and flexibility are important within the context of this research since they outline some fundamental differences on how the research participants may view career decisions.

Work environment & authority

Hierarchal systems of workplace management are the oldest organisational arrangement we know and one of the most widely accepted (Button and Sharrock 2009). Systems based on a hierarchy are characterised by a clear chain of command.

While some say this is an obsolete way of doing business, others classify egalitarian systems as being confusing and messy (Zitek and Tiedens 2012). When it comes to organizational structures, generational differences can play a part in determining an individual's preference for a certain work place or career field too. Generation Y feels the need to have a work environment that forms relationships—something that might be difficult in an hierarchical setting (Horeczy et al. 2012).

One of the main traits of Baby Boomers rests on the fact that they were raised to respect authority figures. As such, they are typically reluctant to go against peers and the judgement of others who do not see things their way. At work, they value the chain of command and expect authority (Tolbize 2008). Some studies have found that both Generation X and Generation Y are comfortable with authority figures and are neither impressed with titles nor intimidated by them. Unlike their older counterparts, they find it natural to interact with their superiors and to ask questions (Armour 2008; Horeczy et al. 2012).

While Baby Boomers are more comfortable in hierarchical settings, members of Generation X work better in informal environments, where they have the chance to interact and consult with their peers. These individuals desire less oversight combined with more responsibility, and are even impatient to show what they can do (Kunreuther 2003). They distrust hierarchy in the sense that they prefer to judge on merit rather than on status (Conger 1998, 1997). Typically, generations X and Y do not see the relevance of hierarchy in the workplace (Moore and Hill 2011).

In particular, members of Generation Y have been taught to ask questions, and from their perspective, questioning should not be interpreted as disrespect (Moore and Hill 2011). Typically, Baby Boomers want their opinions to be given more weight because of their experience, and they expect people to do what they are told, while younger workers want to be listened to and have people pay attention to what they have to say (Yu and Miller 2005). Generation Y does not believe in unquestionable respect, assuming that respect must be earned. The contrast between Baby

Boomers and the subsequent generations is even more stark when it is acknowledged that Baby Boomers may not appreciate equal respect being showed to all, wanting to be treated with more respect than one would show someone at a lower level in the hierarchy or with less experience (Tolbize 2008).

Generation Y members aim to work faster and better than other workers. They want fair and direct managers who are highly engaged in their personal development (Martin 2005). Ongoing learning is an important element of their life; they seek creative challenges and see co-workers as a vast source of knowledge (Gursoy, Maier, and Chi 2008). Generation Y is extremely goal-oriented. They have grown up getting constant feedback and recognition from teachers, parents and coaches, and can resent it or feel lost if communication from bosses is not regular (Terjesen, Vinnicombe, and Freeman 2007). This young generation is also characterised as having a taste for defying authority. They dislike inflexible workdays, and they will battle against them because they very much value flexible working hours. In addition, Generation Y is seen as valuing work-life balance, life styles, career development and overseas travel more than other generations (Gursoy, Maier, and Chi 2008).

For a leadership style to be effective in today's modern workplace, it will need to move away from a hierarchical, position-based influence to a more knowledge-based influence (Martin 2005). This is because workers who value knowledge do not see themselves as subordinates or employees, but see themselves more as “associates” of the organisation rather than “employees”. Thus, these workers need to collaborate more with their leaders rather than be managed by them (Yu and Miller 2005).

These broad differences in relation to attitudes towards hierarchies and authority are important within the context of this research due to the fundamentally different work environments within the hospital and general practice setting. It is argued that, in particular, the traditional hierarchical structures within the hospital

environment creates some disconnect with the preferences of the emerging generation, and may have some impact on future career choices.

Personality Job-Fit, job satisfaction and remuneration

Personality Job-Fit, or Person-Environment (P-E), as it is often referred to, has been the subject of much theoretical and empirical attention over the course of several decades (Ehrhart 2006). Job fit refers to the degree to which a person's cognitive abilities, interests and personality dynamics fit those required by the job. In short, a person's traits are likely to provide insight as to their adaptability within an organisation (Ehrhart 2001). The degree of confluence between a person and the organisation is a more recent phenomenon that expands the traditional scope of work in this space (Hvizdos Wolf 2007).

When it comes to the generational context, there is evidence that person-organisation (P-O) values fit is important for all generational groups (Cennamo and Gardner 2008). In their work, Cennamo and Gardner (2008) found significant generational differences for individual work values involving status and freedom, but not for extrinsic, intrinsic, social and altruism-related values, and there were no generational differences in perceived organisational values. They observed that younger generations placed more importance on social status and freedom than the older group. Baby Boomers reported better fit for extrinsic work values such as hierarchical status and pay and benefits than the younger groups.

Researchers have found that P-O fit significantly impacts turnover intention, job satisfaction, and organisational commitment (Ryan 2009). In addition, a significant relationship was found between P-O fit and career satisfaction (Westerman 1997). In an interesting cross-generational study, it was noted that job satisfaction has more to do with where someone is in their career and what they may value earlier rather than later in their career, which stems from generational differences (Harris 2007).

In relation to communication styles, generations X and Y tend to place less weight on hierarchy-based conventions and more on the development of honest relationships based on mutual respect (Tolbize 2008). One of the things that Generation Y values the most is constant communication and feedback. This requires a particular leadership style that reduces communication barriers between the higher and lower positions of the work environment (Horeczy et al. 2012). In another study, it was observed that Generation X perceived their immediate supervisors as more transformational, but Generation Y still had higher expectations of their supervisors' leadership behaviours (Chan 2005).

The concept of job satisfaction has traditionally been of great interest to social scientists (Ehrhart 2001; Kalleberg 1977; Clark, Kristensen, and Westergård-Nielsen 2009) concerned with the problems of work in an industrial society. Research has often looked at job satisfaction from a values-based approach, which assumes that work that enables satisfaction of one's needs furthers the dignity of the human individual (Kalleberg 1977). However, money continues to be a topic of interest in this context, and it has been shown to have a significant impact in people's behaviour, performance and effectiveness in the workplace (Tang 1995; Tang, Kim, and Tang 2000). Job satisfaction has been found to be positively correlated with one's own earnings, as well as with the average earnings of all other workers within the same organisation (Clark, Kristensen, and Westergård-Nielsen 2009).

Generational differences influence many aspects of the employee's drive and goals, including money (Gursoy, Maier, and Chi 2008). Due to their upbringing in a post-war economic growth era, Baby Boomers place a high value on material wealth, and this is underpinned by a willingness to work hard and wait their turn for promotions (Clausing et al. 2003). In contrast, Generation X are big fans of instant gratification, and expect quick rewards and recognition for their work through title, praise, promotions and pay (Gursoy, Maier, and Chi 2008). This generation is prone to change jobs frequently and also to become entrepreneurs. Starting their own companies allows them to obtain their much-desired power, status and—if they are lucky—money (Lankard 1995).

Money has been used to attract, retain and motivate employees in organisations. Tang (1995) argues that most people work for their money, and feelings of underpayment tend to be stable and difficult to eliminate. He argues that those who value money do not necessarily have a higher income than those who do not. Thereby, those who value money tend to have a high level of pay dissatisfaction and, consequently, a low intrinsic job satisfaction (Tang 1995).

Baby Boomers are generally more loyal employees and prefer "one job in a lifetime", with a willingness to patiently wait for their money rewards (Gursoy, Maier, and Chi 2008). Whilst money is broadly important across the generations, researchers have found that whilst Baby Boomers place a high value on money, they do not view it as highly as a sign of status and prestige as generations X and Y do (Shaul 2007). Traditionally, Baby Boomers were regarded as the ardent "savers", but in light of the recent global downturn, Generation Y is now emerging as the most money-conscious and financially savvy group (Bryck 2003).

Members of Generation X typically want more than just money and are said to prefer a reasonable salary in addition to development opportunities such mentoring, coaching, etc. (Jorgensen 2003). Martin (2005) suggests that Generation Y is harder to typecast due to its intrinsic diversity. However, with reference to career, members of this generation want to play meaningful roles doing meaningful work on teams of highly committed, motivated co-workers. They are not interested in waiting for promotions, though they are still keen to achieve higher remuneration (Martin 2005).

Generation Y has been said to have similar expectations to other generations with reference to a starting salary. However, they expect much faster subsequent growth in the form of promotions and pay rises (Ng, Schweitzer, and Lyons 2010). Money continues to be the single most important motivational factor for this group, but it needs to be in the context of meaningful and fulfilling work (Lancaster and Stillman

2002). Overall, Generation Y continues to place the highest value on individual aspects of the job (Ng, Schweitzer, and Lyons 2010). Emerging literature suggests that new graduates will consider jobs based on their debt burden (Finnie 2002; Dwyer, McCloud, and Hodgson 2012). Whilst Generation Y is likely to be the most educated generation (Noble, Haytko, and Phillips 2009), it is also likely to have high levels of debt (Levenson 2010). As such, remuneration will remain an aspect of the decision process into the future.

2.4.6 Section summary

This section has particularly explored the various career theories that impact on selection of medical specialty by medical students, pre-vocational doctors, registrars and practising GPs. The work of key theorists has been examined and summarised to give the reader a firm understanding of theoretical concepts that relate to this research study. Broad recognition and acknowledgement was given to the concept that the decision process is predominantly a developmental process that is guided by the journey of the individual. This has proved to be of key importance within the context of this research since all of the interviews and analysis of the research participants confirmed the importance of this journey and how it shapes the outcome.

The overview of key decision models and decision styles included in this section has outlined how individual career direction can be determined using empirical tools. Issues related to gender and inter-generational differences were also explored to outline how individual career aspirations can vary across the group, due to these fundamental demographic variables, and ultimately impact on the decision process.

2.5 Review of Similar Research

2.5.1 Section overview

This section provides a detailed review of literature exploring themes related to the career choices of doctors who have chosen general practice as a specialty across the Australian and international context. While most overseas studies use the term

"family medicine" instead of "general practice", given the Australian context of the study, "general practice" has been used in the literature review. Section 2.5.2 provides a brief overview of how the research was conducted and the search terms used. Section 2.5.3 explores the literature addressing the key themes related to personal, social and professional factors that were a focus of this study. The section concludes with a brief summary of the key issues raised, and provides the backdrop for the analysis and discussion in chapters 5 and 6.

2.5.2 The process of collecting related literature

In reviewing previous research related to decision choices for doctors and how they pick their specialty, a wide review of the literature in both the Australian and international contexts was conducted. It is important to note that the term "general practice" in the Australian context implies that the individual has undergone vocational specialisation, which has been mandatory since 1996. However, in the international context, this term can sometimes be used to describe the role of a medical practitioner who has not undergone any vocational recognition. In Australia, the term "general practitioner" mirrors the role of family physicians in other countries. For the purpose of this study, literature that looks at both family physicians and general practitioners was considered.

Stage one of the research involved collecting relevant articles related to this research. In the first instance, all Australian sources of research related to this topic were gathered. Medline was used as the primary source for the literature review. Follow up searches were conducted across the *Medical Journal of Australia*, *British Medical Journal* and *Australian Family Physician*. Using search terms that included "career choice", "career decision", "general practice" and "general practice career" resulted in over 10,000 responses from the databases mentioned above. These results were evaluated based on relevance, and were reduced to 645 articles that were from peer-reviewed journals within the Australian context. After careful consideration of the abstracts, content, and key focus of these articles, this was narrowed down to a list of 23 key studies. Only those studies were selected that

explicitly looked at career intentions or decisions related to choice of specialty (Refer Appendix 1).

After reviewing the Australian literature on this topic, it became apparent that a number of the studies drew on literature from New Zealand (Poole, Bourk, and Shulruf 2010; Zarkovic, Child, and Naden 2006; Lawrence, Poole, and Diener 2003), the United Kingdom (Evans, Lambert, and Goldacre 2002; Watson et al. 2011; Parkhouse and Ellin 1988), and Canada (Wright et al. 2004; Bethune et al. 2007) . These were retained due to significant similarities across the health and vocational training systems.

As a result, a further review of related literature was conducted across literature from the United Kingdom, Canada and New Zealand. The term “family medicine” was added to the search terms since this term has broader relevance in the international context and is used within the context of general practice. The initial search using Medline returned over 100,000 responses, and this was narrowed down to 2178 articles that had the highest relevance rating. The abstracts of all articles were reviewed and shortlisted to 52 key articles from New Zealand, the United Kingdom and Canada that were found to be relevant to the current study (Appendix 1).

A final search was conducted using similar terms to include articles from the United States of America, and a number of other countries based on research titles. An additional 71 articles were shortlisted as part of the literature review, and these are included in Appendix 1. In sum, a total of 146 articles, drawing from a vast international context of studies, were included in the literature review, thereby providing a comprehensive analysis of the literature available on this subject.

In appreciation of the iterative process of data collection and literature review as outlined in Appendix 1, the literature review and readings were conducted in conjunction with the data collection, which informed the process of short listing the

relevant articles related to this research. As such, it is important to note that the literature review in this section was started at the inception of the study, but continued through the process of data collection and analysis.

For ease of analysis, and to align with the objective of the study, the literature review was broken into sections related to personal, social and professional factors that impact choice of specialty, as discussed in the following section.

2.5.3 Factors that influence choice of specialty

There are multiple studies that explore factors that influence choice of specialty within medicine and why individuals select general practice. A number of studies have focused on a variety of factors in relation to medical career choices, including flexibility (Larkins et al. 2004; Thistlewaite et al. 2008), gender (Heiliger and Hingstman 2000; Mayorova et al. 2005), remuneration (Siveya et al. 2012; Morra, Regehr, and Ginsburg 2009), prestige (Creed, Searle, and Rogers 2010; Newton, Grayson, and Whitley 1998), role models (Campos-Outcalt et al. 1995; Wright, Wong, and Newill 1997), personal background (Pretorius, Milling, and McGuigan 2008; Bunker and Shadbolt 2009), intellectual challenges, (Senf, Kutob, and Campos-Outcalt 2004; Gaspar 2010) and a variety of other issues.

Many of the studies conducted have tended to focus on singular areas such as flexibility or personal background or remuneration, rather than looking at the overall complexity of the career decision process and the richness of the variables that impact on career decisions. Wright et al. (2004), looking at the background of medical students in Canada who identified general practice as their first choice, noted that they tended to be older, concerned about lifestyle, and tended to have lived in smaller communities at the time of completing high school (Wright et al. 2004).

Bland et al. (1995) carefully reviewed all the literature on determinants of primary care specialty choice. The result was very a detailed list of such determinants, as supported by evidence published up to that point. According to this study,

characteristics associated with primary care career choice are the following: being female, older, and married; having a broad undergraduate background; having non-physician parents; having relatively low income expectations; being interested in diverse patients and health problems; and having less interest in prestige, high technology, and surgery (Bland, Meurer, and Maldonado 1995). More recently, an Australian study (Temple-Smith et al. 2011) identified as many as 35 key factors influencing selection of general practice as a career. These include issues mentioned by Bland et al. (1995), but also add additional ones such as impact of role models, work life balance, variety and scope of clinical practice.

In an attempt to summarise and review the key issues identified in the literature as related to decision factors that influence choice of specialty, they have been broadly grouped across three broad categories: personal, social and professional. This categorisation aligns with the overall objective of this study and allows for unique perspective to understand the key issues that impact career choices. Table 2.2 provides a description of the key factors that sit under each domain, and the literature related to each is discussed in the subsequent sections.

The themes captured in this table essentially cover all the issues that have been studied across the 146 articles that were included in the literature review. This format provides a unique lens to understand the complexity of the factors that impact on the choice of specialty. Each section that follows, mirrors the categorisations in this table, for ease of critically evaluating the literature.

Table 2.2 Factors arising from literature review regarding impact on choice of specialty

Personal Factors	Social Factors	Professional Factors
Demographic Includes issues related to gender, age and graduate status at the point of entry into medical school	*Perceptions* Includes issues related to prestige and how general practice is viewed by other doctors and the wider community	*Patient Interaction* Includes patient interaction, continuity of care, patient relationship

Biometric Explores issues related to personality and origin (e.g. growing up in an urban vs. rural environment, childhood exposure to medicine or general practice)	*Lived Experiences* Refers to personal experience via clinical rotations, placements, scholarships and other opportunities	*Job satisfaction* Includes autonomy, ownership and control, financial aspects, professional support
Personal Choice Refers to issues such as lifestyle, flexibility, length of training, work life balance, remuneration	*External Influences* Includes impact of peers, clinical and academic role models, institutional affiliation and curriculum	*Type of medicine* Includes variety and scope of practice, procedural and diagnostic aspects, holistic medicine

2.5.3.1 *Personal factors*

2.5.3.1.1 Demographic factors

Gender

Gender has been the focus of a number of studies in relation to career choice preferences of doctors. Studies from New Zealand (Lawrence, Poole, and Diener 2003), the UK (Heiligers 2012; Heiligers and Hingstman 2000; Wakeford and Warren 1989) and the USA (Levine et al. 2013) suggest that gender does play a role, and women are more likely to select general practice. In one Dutch study (van Tongeren-Alers, van Esch, and Verdonk 2011), researchers found that forty percent of Dutch medical students reported no specialty preference at this stage of their education. However, when asked, female medical students said they had opted for general practice because they wished to combine work and care, whereas male students opted for surgery and valued career opportunities (van Tongeren-Alers, van Esch, and Verdonk 2011).

Buddeberg et al. (2006), in a study of Swiss resident doctors, found that gender was the strongest influencer when predicting specialty choice. They noted that gender

was the main factor that predicted career selection in general practice, followed by career motivation, personality traits, and life goals. Interestingly enough, personality traits were no longer significant after controlling for career motivation and life goals as covariates. However, the effect of gender remained significant after controlling for personality traits, career motivation and life goals (Buddeberg-Fischer et al. 2006). A similar study from Spain (Monleon-Moscardo et al. 2003) went a little further, connecting gender not only to career choice, but also to personality traits. According to the team responsible for this study, female students were more affectionate, conscientious, bold, astute and self-sufficient; whereas male students were more tough-minded, suspicious, practical, rebellious and self-sufficient (Monleon-Moscardo et al. 2003).

Conversely, there are some researchers (Maiorova et al. 2008; Diderichsen et al. 2013) who argue that gender, in fact, does not have an impact on choice of specialty. Diderichsen et al. (2013), in a cross-sectional study carried out in Sweden, found that on the whole, male and female last-year students opted for similar specialties. They further noted that men and women had an almost identical ranking order of motivational factors. The gender similarities in the medical students' specialty preferences that were observed are striking, and contrast with research from other Western countries, where male and female students show more differences in career aspirations (Diderichsen et al. 2013; Maiorova et al. 2008). This suggests a reflection of Sweden being a highly socialist country, as compared to Australia, the UK, Canada and the US.

As the research around gender impact on choice of specialty has evolved, it has considered factors as to why females are more likely to pick general practice. One study (Horst et al. 2010) noted that women considered work and time-related aspects and patient orientation to be more important factors in their choice, and career-related aspects to be less important, than did men. Another study (Sanfey et al. 2007) found that the decision to have a family was a more significant influence on women than men. This is understandable since the choice to start a family can be limited by age. However, they found that family and lifestyle priorities were also

important to male students. Lawrence et al. (2003) argue that women who have flexible jobs are more satisfied with their careers than those that do not. They argue that barriers to full participation by women in medicine need to be systematically examined and removed. They suggest that initiatives that allow and value more flexible training and work practices, particularly through the years of child raising, are necessary for women and the health care workforce at large (Lawrence, Poole, and Diener 2003).

In the United States, for example, during 2004 and 2005, more than half of primary care residents were women (Brotherton, Rockey, and Etze 2005). As such, researchers have noted that female students have a more positive opinion of family practice than their male counterparts (Ozcakir, Yaphe, and Ercan 2007). This is reflected in Australia, where consistently more than sixty percent of entrants into the Australian GP training program from 2001 to 2013 were female (General Practice Education & Training 2013).

So, one could jump to the conclusion that women are more inclined to choose the specialty of general practice when compared with their male counterparts. However, it would be simplistic to assume that female counterparts were not interested in other specialties. In fact, Elisabeth Gjerberg's (2002) analysis of gender differences and similarities in preferences and specialisation suggests that the low proportion of women in male-dominated areas of medicine does not reflect women's lack of interest in specialties like surgery and internal medicine. She noted that although women were as likely as men to start their career in these fields, the issues were related to not being able to complete their specialist training. Gjerberg (2002) found that heavy workloads with duties and "nights on call" made it difficult for women to combine their preferences for childcare and work, and as a result, a higher proportion of men completed their specialist training in surgery. She also found that female specialists in surgery and internal medicine postponed having their first child, compared to women in other medical specialties. However, the fact that some women change from surgery to gynaecology and obstetrics, a specialty

whose duties and workload are to a considerable extent comparable with those of surgery, indicates that structural barriers such as combining childcare and a hospital career do not fully explain the impact of gender (Gjerberg 2002).

Broadly, the social roles women typically play can, sometimes, compromise their career progression. Taylor et al. (2009) noted in their study that the inability of women to progress in their careers (as compared to men) was, generally, a reflection of not having always worked full time due to child bearing and rearing. The findings suggest that women do not generally encounter direct discrimination; however, the possibility that indirect discrimination, such as lack of opportunities for part-time work, has influenced choice of specialty cannot be ruled out (Taylor, Lambert, and Goldacre 2009).

In conclusion, the variety of literature on this issue suggests that it is not just gender per se that is able to influence career choice. Rather, it is a complex combination of societal conditioning; reduced opportunity due to demands of child bearing and family, and; the consequent importance placed on a number of aspects by each gender that impacts on the choice of specialty. The fact that these studies also come from a range of countries with different social, cultural, political and ideological frameworks that drive their health care systems and medical training, also has to be taken in to consideration. It would be reasonable to suggest that, through societal conditioning, these all have an impact on individual attitudes, and hence, have an impact on the decision process. Given the importance of this variable in the literature, gender was included in this study as an important factor and in determining the participant selection matrix, as outlined in chapter 4.

Age and Graduate Status

It was interesting to note that very few studies focused on age per se as a determinant of career choice. Some earlier studies (Woodward and McAuley 1984; Nieman and Gracely 1999) failed to find any correlation between age and choice of specialty. Woodward and McAuley (1984) noted that there were no significant

differences in age between the graduates who chose primary care and those who chose a specialty. However, Hojat et al (1995) found that primary care physicians were slightly older than their non-primary care counterparts at the time they entered medical school. They argued that there is a possibility that relatively older entrants to medical school could be discouraged from pursuing medical specialties that require longer training since this has the effect of delaying their 'full entrance' into the medical workforce (Hojat et al. 1995). The potential impact of age was further confirmed in a later study (Senf, Campos-Outcalt, and Kutob 2003) where researchers noted that older students were more likely to consider general practice.

Within the Australian context, there have not been any significant studies linking age to choice of specialty. Currently in Australia, over 81% of medical students are under the age of 25 at the time of commencing their medical degree, with fewer than 6.3% being over the age of 30 (Health 2014). However, with recent trends towards medical universities establishing graduate entry programs, there is now a steady shift towards graduate entrants into medical schools. In 2013, over 45% of the students entering medicine were undertaking a post-graduate course (Health 2014), as opposed to 36 % in 2009 (Australian Government Department of Health and Ageing 2011). This was noted as being driven by supply, rather than choice, i.e. medical schools are increasingly offering post-graduate courses instead of under-graduate courses, hence, medical students are automatically ending up in post-graduate courses, as opposed to choosing them. The researcher argues that this trend will inevitably have some impact on career choices. One older study (Lambert et al. 2001) has noted that post-graduate entrants to medical school were more likely than under-graduates to choose general practice. As such, it is plausible that the changing entry profile of medical students may have some impact on career choice towards general practice.

The decision to pursue a career in medicine later in life can be dependent on a variety of factors. It was noted that the question of whether the differences in age and graduate status of medical students play a role in their choice of a career in

general practice is not covered well in the literature, and does need some further research. Given the gap in the literature regarding the impact of age, it was included as one of the variables in the participant selection matrix, which is presented in chapter 4.

2.5.3.1.2 Biometric factors

Personality

Personality is often touted as an important factor for doctors when making choices regarding their careers, and this has been the subject of a vast array of studies and investigations (Boyd and Brown 2005; Ciechanowski et al. 2004; Borges et al. 2009). Studies on this topic have tried both to verify the actual existence of such influence (Coutts et al. 1997), and quantify the extent (Stilwell et al. 2009) and the conditions (Nasmith et al. 1997) under which it was a significant influence.

One of the tools most commonly employed for personality profiling is the Myers Briggs Type Indicator (MBTI) (Myers & Briggs Foundation 2014), and this has been used in a number of studies related to doctor career choices (refer section 2.4.3 for more relevance of MBTI in the literature). One Australian study (Boyd and Brown 2005) demonstrated that medical specialties can attract particular personality types, as assessed by the MBTI. A similar study in the US (Friedman and Slatt 1988) actually demonstrated that the MBTI taken in the first year of medical school was statistically predictive of specialty choice in the first post-graduate year. Bitran and Zúñiga (2005) found that in surgical specialties, a larger proportion of individuals demonstrated extraverted, intuitive and structured traits, whereas in Paediatrics and Internal Medicine, individuals predominately expressed intuitive and people-oriented traits. Primary Care, in turn, had individuals with more introverted, intuitive and flexible attitudinal traits. However, in analysing the data, researchers outline that whilst there are some broad correlations between the personality types of people and their choice of certain types of medical specialty, diversity is still the rule rather than the exception (Bitran, Zúñiga et al. 2005).

Holding strong humanistic values (Rodriguez, Tellier, and Belanger 2012) and a tendency toward benevolence (Eliason and Schubot, 1995) have also been noted as personality traits that predict selection of general practice. An earlier quantitative study on humanistic values (Coutts et al. 1997) was able to accurately demonstrate that the students who selected primary care specialties had significantly higher mean humanism scores than did the students who selected surgery. Ciechanowski et al. (2004) postulated that life situation is actually an important factor for those that opt for general practice. They suggest that students with a cautious style and a self-reliant style were more likely to choose non-primary over primary care-based specialties, as compared to those with a secure relationship style (Ciechanowski et al. 2004).

A consideration of the above factors resulted in the acknowledgement that personality may lead to a predisposition to choose a particular specialty. However, given the purpose and objectives of this study, this was not seen as a key variable. The objective of this study was to find out key factors that influence decisions, as opposed to personality matching. Furthermore, the scope of this study meant that it was not possible to pre-select research participants based on personality types, nor was it possible to do personality testing on participants. As such, the current study does not attempt to establish any linkages (or otherwise) amongst personality traits and choice of specialty, as outlined in the discussion in chapter 6.

Origin

There have been a number of works that have established the impact of childhood experiences on work intentions and life choices (Naughton 1987; Hertzman 1994). Establishing whether there is a linkage between where medical students grow up and choice of medical specialty has been the subject of multiple studies (Armitage and McMaster 2000; Australian Medical Workforce Advisory Committee 2005a; Azer, Simmons, and Elliott 2001; Brooks et al. 2002; Dunbadin and Levitt 2003). These studies have typically focused on establishing linkages between rural origin

and rural work intentions, and the findings have been overwhelmingly supportive (Kamien 2004; Laven and Wilkinson 2003; Norris 2005; Pretorius, Milling, and McGuigan 2008; Somers, Strasser, and Jolly 2007; McDonald, Bibby, and Caroll 2002).

Importantly, these linkages have been substantiated in studies across different countries such as Australia (Ward, Kamien, and Lopez 2004; Pretorius, Milling, and McGuigan 2008), New Zealand (Poole, Bourk, and Shulruf 2010; Poole et al. 2009), Canada (Woloschuk and Tarrant 2002; Gill et al. 2012; Vanasse et al. 2011; Feldman et al. 2003; Woloschuk and Tarrant 2004), and the United States (Quinn et al. 2011; Royston et al. 2012). In fact, Ward et al. (2004) found that a rural background was the single most important predictor of both rural general and specialist practice. Pretorius (2008) observed that medical students who had graduated from rural high schools were more than twice as likely to enter general practice than those who graduated from non-rural high schools. Other researchers (Royston et al. 2012) have further established that even having a significant other from a rural background seems to influence one's preference for general practice.

Given the near homogeneity of the conclusions of studies relating rural origins to the choice of general practice, one question that might be posed is whether such a preference actually translates into these general practitioners with rural origins establishing their practice in a rural environment. In their study (Lu et al. 2008) of Canadian students with rural origins, researchers came to the conclusion that many residents from the rural stream had no long-term plans to establish rural practices. Reasons cited for not practising in rural areas were related to workload, lifestyle issues, family obligations, and perceived lack of medical support in the community. As Kamien (2004) concluded, it seems that there is not much sense in recruiting and training rural doctors if the conditions under which they are expected to practise are not viable (Kamien 2004).

In addition to rural origins, other elements of personal background are capable of influencing students' later preference for a career in general practice. For example, upon entry to medical school, those student who already hold a prior university degree are a little more likely to choose general practice than those who don't (Lambert et al. 2001). In several studies, the main intentions of students upon entry to medical school turned out to be an important predictor of their ultimate decisions later on (Scott, Gowans, and Boone 2011). Likewise, students planning on a career in a disadvantaged or rural area are more likely to enter general practice (Senf, Campos-Outcalt, and Kutob 2003).

Feldman et al. (2003) noted that having a larger sense of community and of "giving-back" to others has also been acknowledged as another aspect of students' personality that seems to play a role in specialty selection. This trait was found to be more prevalent among those who grew up in a rural setting, and, consequently, these individuals were more interested in general practice. They found that students interested in rural general practice were more likely to have grown up rurally, to have graduated from a rural high school and to have family in a rural location than others. They further noted that these individuals were more likely to be older, in a relationship, to have volunteered in a developing nation, and to be less likely to have university-educated parents than those interested in a specialty. Attitudes of students choosing general practice, rural or urban, include social orientation, preference for a varied scope of practice, and less of a hospital orientation or interest in prestige, compared with students interested in specialties (Feldman et al. 2003). These findings are further substantiated by the conclusions of several other Canadian and American studies (Royston et al. 2012; Gill et al. 2012).

There is an ongoing shortage of general practitioners in rural Australia (Health Workforce Australia 2012b; Norington 1997). As such, most of the research concerned with determining the role of personal background in selecting general practice as a career focuses on the influence of a rural upbringing. Understanding the extent to which the setting in which medical students grew up or had their roots

influences their career choices might give important clues for strategies and principles to apply when recruiting doctors to general practice. Given the vast array of literature on this topic and the importance given to the issue of rural origin, the decision was taken to include this as a variable in the participant selection matrix. Whilst conducting this literature review, it was noted that there were no major studies that explored linkages between substantial childhood experiences or impact of family members, especially if they were medical practitioners, on choice of specialty. As such these issues were included as exploratory questions as part of the interview process.

2.5.3.1.3 Personal choice factors

Flexibility, lifestyle & work-life balance

Having a career that allows for a good balance between the professional and personal spheres of life and that provides for some flexibility in different ways, is a goal for many people (Arthur, Hall, and Lawrence 1989; Parsons 1909; Patton and McMahon 2006). Whilst there can be gender (Heiligers 2012) and generational (Heiligers and Hingstman 2000; Gursoy, Maier, and Chi 2008) differences, the broader implications of finding some work-life balance remains an important criteria across career choices (McNamara 2005). Within medicine, there is increasing literature that identifies issues such as flexibility and work-life balance as important factors that determine career decisions (Thistlewaite et al. 2008; Watmough, Taylor, and Ryland 2007; Watson et al. 2011).

Beaulieu et al. (2003) noted that there is a general agreement among Canadian general practice residents that this specialty is more flexible than other medical specialties. They reported that these doctors strove for balance between their professional and personal lives as an active choice (Beaulieu et al. 2003). In a subsequent study (2006), they further assessed the perception that general medicine trainees had of their own specialty, and concluded that they were willing to accept the burden of general practice as long as responsibility could be shared, and as long as there was freedom for flexible progress along a modern career track (Beaulieu et al. 2006). Within the Australian context, medical students have noted

that flexibility of training and working hours are two of the main factors that influence career choices (Thistlethwaite et al. 2008).

Work-life balance is also seen as a very important factor. Watmough et al. (2007) demonstrated that medical graduates chose their career pathway for a number of reasons, including the consideration of specialties that would secure a homework balance. Thistlewaite et al. (2008) note that many general practitioners no longer choose to work full time, and the flexibility of working hours is not only attractive for doctors, but also a key influencer of medical students' choice. They suggest that the potential for varying hours, and the diversity of the workload should therefore be highlighted as major attractions of general practice, perhaps as a way of increasing interest in this specialty (Thistlethwaite, Kidd, and Leeder 2008).

Skinner (2006) argues that doctors now have different and diverse sets of priorities, leading them to strive for a work-life balance. He advocates that medical curricula must be adapted and made flexible to fit the ever-changing role of the general practitioner (Skinner 2006). One British study goes as far as to say that the most important reason for both women and men choosing general practice as a career in the UK is its compatibility with family life (Watson et al. 2011). In a study (Parkhouse and Ellin 1988) of doctors who qualified from British medical schools in 1974 and 1977, which was carried out five to eleven years after graduation, frequent changes of career choice were found. Most of these changes occurred at a relatively early stage. There was a shift of choices towards general practice, predominantly from medicine, surgery, and paediatrics. The study found that domestic circumstance was an important determinant in these career shifts (Parkhouse and Ellin 1988). So, although it is perhaps perceived as being associated with less challenging clinical content compared with the acuity and complexity of hospital-based medicine, general practice is seen as offering a superior lifestyle (Petchey, Williams, and Baker 1997), so much so that it can be a driver for career changes.

It is interesting to note, however, that the perceptions regarding flexibility in general practice are not universal. In a Polish study, Pawełczyk et al. (2007) note that among students and doctors there is a negative perception of general practice because of its long work hours and less time for family, insufficient diagnostic possibilities and monotony. They outline that general practice is chosen due to a lack of other possibilities, difficulties in employment, and the opportunity to become "a specialist" in a short time (Pawełczyk, Pawełczyk, and Bielecki 2007). Similarly, a German study (Buddeberg-Fischer et al. 2008) noted that general practice is not popular, and the conditions of work as a general practitioner have a deterring effect on young physicians' career choices. A recent study in Germany (Kiolbassa, Miksch, and Goetz 2011) recommended that improving job conditions in terms of family compatibility and work-life balance could help to increase the attractiveness of general practice in Germany. In this context, it is worthwhile to note that there can often be issues endemic to the design of particular health systems in certain countries that that are vastly different to those of other countries, and that can impact on the career choices of the affected individuals. However, it is important to note that the underlying issues impacting this choice, such as work-life balance and workload, can be similar.

Researchers have noted that issues such as work-life balance and flexibility can be perceived differently across the generations (Heiligers 2012; Buddeberg-Fischer et al. 2008; Lawrence, Poole, and Diener 2003) and hence, impact their career choices in different ways. Lawrence et al. (2003) argue that gender can also play a similar role in predicting the importance of work-life as a key influencer.

In summary, the literature on this issue broadly agrees that flexibility and work-life balance are key issues. However, gender differences also come into play, with female counterparts more likely to value flexibility and work-life balance (Buddeberg-Fischer et al. 2008; Lawrence, Poole, and Diener 2003; Buddeberg-Fischer et al. 2006). This was noted as a key issue for this study, and its importance is discussed in chapter 5 and 6.

Money

Income has been linked to career aspirations across a number of studies (Tang, Kim, and Tang 2000; Morra, Regehr, and Ginsburg 2009; Tang 1995). Some generational differences have been noted, with generations X and Y placing more importance on it than baby boomers (Shaul 2007). Within medicine, the issue of income has also been linked to the high costs of obtaining medical degrees (Grayson, Newton, and Thompson 2013; Moore et al. 2006; Rosenblatt and Andrilla 2005; Rosenthal, Marquette, and Diamond 1996; Dwyer, McCloud, and Hodgson 2012). A New Zealand study aiming to assess the impact of medical student debt on career intentions (Moore et al. 2006) noted that 43% of respondents stated that their student debt had influenced their choice of intended specialty. Grayson et al. (2013), in a recent study, concluded that students who valued income highly were especially inclined to switch away from primary care during medical school. They noted that the switch was associated with debt, as well as with a marked increase in anticipated income (Grayson, Newton, and Thompson 2013).

In the Australian context, researchers have noted that general practice would be much more popular as a career choice if remuneration was more in line with that of other specialties (Thistlethwaite et al. 2008; Newton, Grayson, and Thompson 2005). They argue that students are able to accurately predict income by specialty from an early stage of training, and have a negative perception of income in general practice (Thistlewaite et al. 2008). Other researchers have postulated that the perception that general practitioners make too little money could be an important driver—or at least a modifier—in the lack of interest in general practice (Morra, Regehr, and Ginsburg 2009; Brett et al. 2009; Newton, Grayson, and Whitley 1998).

Siveya et al. (2012) suggest that by merely changing the remuneration systems, the number of junior doctors interested in general practice would rise. In a policy simulation study, they found that increasing general practitioners' earnings by $50,000 could increase the number of junior doctors choosing general practice by

between 8 and 13 percentage points. In a study in Norway (Abelsen and Olsen 2012), researchers noted that an activity-based remuneration system that directly linked remuneration to services provided (such as in Australia), as opposed to fixed salaries, would attract young doctors to general practice. They observed that the existing remuneration mechanism has a selection effect on who would like to become a general practitioner (Abelsen and Olsen 2012).

However, researchers have noted that not all medical students are motivated by money, with some placing higher value on flexibility and lifestyle (Senf, Campos-Outcalt, and Kutob 2003). Knox et al. (2008) noted that significantly more primary care students than other specialty students consider salary and competitiveness "not at all" important. They concluded that those students who believe primary care to be important, have low income expectations, and do not plan a research career, are more likely to choose general practice, whereas, students rejecting general practice are concerned about prestige, low income, and the breadth of knowledge required (Knox et al., 2008).

In summary, there are two general types of medical students: those who place money and prestige at the top of their preferences, and those who value their lifestyle above income. The value given by each person to one or the other has been associated with personality traits . Bland et al. (1995) noted that the following student characteristics were associated with a primary care career: being female, older, and married; having a broad undergraduate background; having non-physician parents; having relatively low income expectations; being interested in a diversity of patients and health problems; and having less interest in prestige, high technology, and surgery. Regardless of gender and generational differences, money has been linked to career choices across a number of studies as outlined above. As such, this was included as a key area to explore as part of the interviews to gain a better understanding as to the importance of this factor in determining choice of specialty.

2.5.3.2 *Social factors*

2.5.3.2.1 Perceptions

Prestige

A number of studies have indicated that prestige is one of the factors that has an impact on choice of specialty amongst medical graduates (Bland, Meurer, and Maldonado 1995; Creed, Searle, and Rogers 2010; Senf, Campos-Outcalt, and Kutob 2003; Senf, Kutob, and Campos-Outcalt 2004). Broadly, all studies are consistent in noting that medical students regard certain medical specialties, such as general practice, as less prestigious. Interestingly, some earlier studies have found that doctors pursuing general practice had a low interest in prestige (Senf, Campos-Outcalt, and Kutob 2003; Newton, Grayson, and Whitley 1998; Bland, Meurer, and Maldonado 1995). It could be argued that these individuals were selecting general practice since prestige was not an important factor in their choice matrix.

In a relatively recent Australian study, Creed et al. (2010) noted that both medical specialty prestige and lifestyle preferences are important issues for current medical students. They noted that perceptions around these issues are built deeply into their reasoning and have a profound influence over future career choices. They outlined that there is a common belief that lifestyle and prestige are at opposite ends of a spectrum, and noted that dermatology, general practice, and public health medicine were ranked the most lifestyle-friendly and least-prestigious, whilst surgery, obstetrics and intensive care were seen as being more prestigious but less friendly from a lifestyle perspective (Creed, Searle, and Rogers 2010).

However, the link between prestige and choice of specialty as a primary driver remains unsubstantiated in literature. This study acknowledges the gap in the literature related to this issue, and includes this as a specific area for exploration of participant attitudes to issues related to prestige.

2.5.3.2.2 Lived experiences

Preceptorships

Super (1969) has proposed one of the most universally accepted theories on career decision-making (section 2.4). In this theory, he described career choice as the "evolving sequence of a person's work experiences over a period of time" (Arthur, Hall, and Lawrence 1989). Krumboltz (1976) expanded this to include the social context in which this learning occurs, and postulated that it was a cognitive learning process. Preceptorships are a fundamental part of medicine, and all medical students go through a variety of clinical rotations to achieve their medical qualifications. A number of studies have looked at the impact of these lived experiences on choice of specialty (Bland, Meurer, and Maldonado 1995; Rabinowitz 1988; Senf, Campos-Outcalt, and Kutob 2005; Senf and Campos-Outcalt 1995).

Rabinowitz (1988) noted that students who attended medical schools with a required third-year preceptorship in general practice were significantly more likely to enter general practice training than students who attended schools with a required fourth-year preceptorship, or who attended a school with no required general practice preceptorship (Rabinowitz 1988). This was further confirmed by Bland et al. (1995) in studying potential factors that influenced the choice of primary care as a specialty. In their research they found that general practice preceptorships and longitudinal primary care experiences were associated with increases in the numbers of students choosing primary care. Another investigation, conducted by Senf et al. (1997) demonstrated that interest in general practice at matriculation and a required third-year and/or fourth-year time in primary care were the two best proximate predictors of selecting a career in general practice. They also noted the preceptorships not only increase the students' interest for the specialty, but also change personal perceptions of the field. These results reflected both a value clarification process and a value indoctrination effect (Senf et al. 1997).

In addition to the impact of the preceptorship, researchers have also noted that timing was a key factor, and those who had these experiences earlier had a greater likelihood of picking general practice (Rabinowitz 1988; Campos-Outcalt et al. 1995).

This information could quite possibly be used to feed important decision-making processes and policy creations that aim at increasing the number of students interested in general practice. A British study, (Morrison and Murray 1996) further noted that the duration of the preceptorship also had an impact. In their investigation, they found that a new, four-week general practice attachment influenced students, especially males, towards a career in general practice, but this effect was transient. A similar study, directed towards rural medicine, registered identical behaviours (Lynch and Willis 2000). Student feedback indicated that the three-day preceptorship was a valuable learning experience, but the preceptorship did not appear to influence students' opinions about or interest in living in and working in small towns or rural areas. This suggests that exposure must be sustained for longer periods of time in order for it to have the desired impact.

Nevertheless, there has to be a focus not only on creating the programs, but also on ensuring their intrinsic quality. Researchers have argued (Tolhurst and Stewart 2005; Kiolbassa, Miksch, and Goetz 2011) that many students are deterred from a career in general practice because of negative undergraduate general practice experiences. Scott et al. (2007) note that medical schools should offer high-quality general practice clinical experiences, consider the potentially positive influence of rural settings, and provide early and accurate information on general practice training and career opportunities. They argue that these interventions might help students make more informed career decisions, and increase the likelihood that they will consider careers in general practice (Scott et al. 2007).

Strong support in the literature for the influence of preceptorships on choice of specialty was noted and was determined to be an interesting area to explore. In particular, it was noted that since preceptorships are a requirement across most medical curricula, it would mean that individuals would end up doing preceptorships that cover multiple areas of medicine. So, it would be important to explore the question of how participants were choosing among specialties if they were undertaking multiple preceptorships. In particular, it would be important to explore

how individuals choose if they have had multiple positive exposures across a variety of preceptorships.

2.5.3.2.3 External influences

Role Models & Peers

A big part of learning, as we realise from a young age, takes place by imitation. Role models and personal experiences ("hands-on" approaches) can have a profound impact on individuals (Lockwood and Kunda 1997; Clark 2009). The role of family and parents in influencing career choices has been established in a number of studies (Santos and Coimbra 2000; Young and Friesen 1992). Whilst parents do not always influence their children's particular career choices, they are seen as influencing their career development (Young & Friesen, 1992). In medicine, the impact of role models has been studied by a number of researchers, and has been found to have a positive correlation (Wright, Wong, and Newill 1997; Bland, Meurer, and Maldonado 1995; Stagg et al. 2012; Ravindra and Fitzgerald 2011).

The role models can be either clinical or academic, and a Canadian study (Jordan, Belle Brown, and Russell 2003) posited that having more general practice role models early in medical school might encourage more medical students to select careers in general practice. Senf et al. (2003) note that academic role models can serve as both positive and negative influences. Some studies (Campos-Outcalt et al. 1995; Campos-Outcalt, Senf, and Kutob 2003) have noted that positive role models (i.e. competent clinicians and professors that attract their students' admiration), can lead to an increase in the proportion of graduates choosing general practice, whereas negative comments can have the opposite effect. One Australian study (Kamien, Bassiri, and Kamien 1999) found that bad-mouthing of general practitioners does occur, and has a negative impact on career choices. Senf et al. (2003) demonstrated in their study that even though required general practice time in clinical years is related to higher numbers of individuals selecting general practice (and is regarded as a generally positive measure), faculty role models can serve both as positive and negative influences (Senf, Campos-Outcalt, and Kutob 2003).

Contact with inspiring or leading individuals in the field might also positively influence medical students to enter into a career in general practice. As an Australian study concluded, some of the key influences on graduates choosing a rural career pathway were the messages and experiences shared by clinical teachers and mentors (Stagg, Greenhill, and Worley 2009). Another Canadian study actually demonstrated that one effective mechanism to increase interest in primary care as a career involves initiating and fostering a general practice interest group that links students with family physicians; teaching and motivating by example appeared to be a good strategy (McKee et al. 2007).

Stagg et al. (2012), in a more recent study, examined both issues of role models and exposure in detail. They found that preceptorships, even as short as three weeks' duration, influence the career choice of students when they rate the preceptor as a high-quality teacher. They found that preceptors who are judged (by students) as high-quality teachers have the greatest influence on student career choice—up to four times more influence than other factors. However, when students judged a preceptor as being a negative role model, a poor teacher, or lacking discipline-specific knowledge, they turned away from that field. They further noted that the positive influence of relationships between preceptors and students on career choice is strongest where there is continuity of preceptors, care, and patient interactions (Stagg et al. 2012).

The impact of peers on career decision-making is also well noted in literature (Rowe, Wouldbroun, and Galley 1994; Alika and Osa-Edoh 2009). Researchers have demonstrated that having friends who serve as academic and social resources can have a direct and positive influence on future career plans (Wentzel 1994; Wentzel and Watkins 2002). However, most of the literature focuses on adolescents, and the impact of peers on choice of specialty of medical students is largely unexplored. As such, it was determined that an exploration of this in greater depth would form part of the interview process.

Curriculum & Institution

People are naturally influenced by their surrounding environment and by the realities they come in contact with. The extent of the influence of a student's particular learning environment, from the type of educational institution to the features of the medical curriculum, has been the object of multiple investigations (Natanzon et al. 2010; Goldacre, Turner, and Lambert 2004; Goldacre, Goldacre, and Lambert 2012; Hays 1993). There is a significant interest in knowing the extent of this influence in depth, as it might eventually help redesign and adjust programs to attract medical students into particular specialties (Pearson et al. 2002).

Hays (1993) was one of the first, in the Australian context, to describe the impact of medical schools as an influential element in students' career preferences. He argued that admission criteria and undergraduate curricula influence career preference, noting that medical students may be socialised into choosing non-generalist careers since the institutional environment of medical schools is weighted towards scientific research and specialised medicine (Hays 1993). Pearson (2002) suggested that broadening selection criteria and curriculum exposure could be used as effective strategies to produce more general practitioners. He states that medical students have recognised patterns in specialty preference, and suggests that initial selection procedures of medical school candidates can be adjusted based on particular background characteristics and attributes. He posits that this can then be used as an efficient tool to attract general practice specialists in general, and rural practices in particular. Pearson noted that the selection of medical school students with rural educational backgrounds may be even more important in determining future rural practice than exposure to rural experiences in medical school (Pearson et al. 2002).

Goldacre et al. (2012), in a recent study, noted that there is considerable diversity among doctors' reasons for finding specialties attractive or unattractive. They confirm that this further underlines the importance of recruitment strategies to medical school that recognise the diversity of students' interests and aptitudes (Goldacre, Goldacre, and Lambert 2012). Adapting medical school curricula to include good general practice experiences throughout has been noted as another

approach to influence career outcomes. Deaville et al. (2011) found that exposure to general practice provided a positive learning experience, irrespective of rural or urban location, and positively influenced attitudes towards general practice (Deaville and Grant 2011). Comparable results were found by a group of investigators from New Zealand, who recommend that medical schools wishing to assist in addressing the needs of their rural communities should consider selecting students from rural backgrounds and ensure that rural health plays a significant part in the school curriculum (Williamson et al. 2003).

Similarly, in another recent study (Steinhauser et al. 2013), the authors found that enabling students to have practical experience with general practice during undergraduate studies had a positive influence on their judgement of general practice as an attractive career option. A number of other investigations from across different international contexts further confirm these types of conclusions (Mariolis et al. 2007; Bethune et al. 2007; Henderson, Berlin, and Fuller 2002).

Norwegian investigators (Wesnes, Aasland, and Baerheim 2012) found that in their country, the total contribution of universities to pre-graduate general practice education may be associated with future GP career choice. They noted that differences among medical schools in the proportion of graduates choosing to be GPs have been partly associated with the number of required weeks' study in family practice, and with each school's mission and funding sources. They argued that a school's overall general practice education, it all its shapes and forms, has a real impact on students' choices and, as such, should be an important object of attention by policy makers (Wesnes, Aasland, and Baerheim 2012).

Tandeter et al. (2001) note that, since students are greatly influenced by the cultures of the institutions in which they train, the negative attitude of a university towards general practice may negatively affect the number of students going into this specialty (Tandeter and Granek-Catarivas 2001). This is further corroborated by other researchers (Natanzon et al. 2010; Kutob, Senf, and Campos-Outcalt 2003), who found that poor representation and image of general practice as a discipline

within the medical curriculum may deter the career choice of students. Kutob et al. (2003) found that an institution that exhibits upper-level institutional support for general practice was demonstrated to be vitally important in encouraging students to pursue a career in the field.

Institutional factors were noted as likely to have some impact on choice of specialty if they limit choices or exposure, or create a negative culture around any particular specialty. An analysis of institutional factors was resolved to be outside the scope of the current study and, therefore, would not be explicitly explored. However, it was determined that the interview style would be broad enough to capture this theme, if it emerged as a significant factor.

2.5.3.3 *Professional factors*

2.5.3.3.1 Patient interaction

Patient relationships

A number of studies have noted that individuals that pick careers in primary care have a high patient orientation (Kiolbassa, Miksch, and Goetz 2011; Pawełczyk, Pawełczyk, and Bielecki 2007) and place a higher value on patient interaction (Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007) and providing continuity of care (Buddeberg-Fischer et al. 2008; Thistlethwaite, Kidd, and Leeder 2008). Senf et al. (2004) found that patient relationships were in fact the most important factor determining choice of specialty for general practitioners. Conversely, a study of medical students interested in surgery (Azizzadeh et al. 2003) noted that they put a lower value on patient relationship, with prestige and career opportunities being more important.

In reviewing the literature on this issue, it was noted that the value of patient relationships has been positively related to general practice across most studies (Rowsell, Morgan, and Sarangi 1995; Thistlethwaite et al. 2008; Thistlethwaite, Kidd, and Hudson 2007; Kiolbassa, Miksch, and Goetz 2011; Buddeberg-Fischer et al. 2006). This was so commonly acknowledged in literature that it was in fact impossible to find any article that looked at this factor in isolation. It was noted as

important to explore whether this factor was seen as more important than other issues, and determine the level of influence it had on the ultimate career choice.

2.5.3.3.2 Job satisfaction

Drivers and Barriers

Job satisfaction is a key determinant of retention and career choice (Ehrhart 2001; Kalleberg 1977; Clark, Kristensen, and Westergård-Nielsen 2009). Most researchers have looked at job satisfaction from a values-based approach, which assumes that work that enables satisfaction of one's needs leads to job satisfaction (Kalleberg 1977). Within medicine, there are a number of studies that focus on professional attributes of job satisfaction (Petchey, Williams, and Baker 1997; Senf, Kutob, and Campos-Outcalt 2004; Kiolbassa, Miksch, and Goetz 2011), as well as job-dissatisfaction (Larkins et al. 2004; Steinhauser et al. 2011). To determine the impact that this has on choice of specialty is important since it has the potential to distinguish specialties in a functional way that can ultimately be addressed via policy, workplace reform and adjusting scope of clinical practice. Petchey et al. (1997), in a UK study, found that that clinical content was a key driver of long-term job satisfaction, and was the most highly valued attribute amongst doctors. Other researchers noted that other advantages influencing job satisfaction were patient interaction (Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007), diversity of clinical practice, and a broad spectrum of work (Buddeberg-Fischer et al. 2008; Thistlethwaite, Kidd, and Leeder 2008).

Besides knowing what motivates medical students to choose general practice, it is equally important for policy makers and medical schools to identify what is actually stopping students from opting for general practice. Rowsell (1995) found that increased workloads and erosion of professional autonomy were key factors that were emerging as negative aspects of job satisfaction in general practice. Larkins (2004) noted in a study of general practice trainees in the UK that issues such as professional isolation and lack of flexibility were key issues linked to low job satisfaction leading to lower number of entrants. A recent German study, (Steinhauser et al. 2011) noted that low income and poor working conditions were

important detractors for general practitioners. Some of the above barriers have been confirmed by Kuikka et al. (2012), who note that workloads, isolation and attending to non-medical problems are key detractors from general practice careers. Conversely, a recent Finnish study (Kuikka et al. 2012) found that a majority of the students considered the most attractive aspect of general practice to be its versatility and challenging work.

In a Spanish study, researchers (Lopez-Roig, Pastor, and Rodriguez 2010) found that a key barrier in relation to general practice was the perception amongst medical students that it was monotonous and non-technological with no intellectual challenge. Lopes et al. (2010) noted that such a negative view, in the early stages of medical training, would lead to a lack of identification with this medical practice by students. They suggest that misconceptions about the practice of family medicine, created and reproduced in health care system and societal contexts, encourage the practice of specialised medicine.

However, it does appear that those who choose family medicine as their career are actually satisfied with their options. In a UK study, Lambert et al. (2003) noted that quality of life issues, and concerns about working relationships, are sufficiently influential to persuade many doctors to abandon an initial choice of medical career. However, they found that, compared to other specialties, relatively few doctors rejected general practice (Lambert et al. 2003). In an earlier study (Lambert, Evans et al. 2002), they argued that this satisfaction is a generational trait, as they found older general practitioners had lower job satisfaction than their counterparts in hospital practice, while younger general practitioners were more satisfied than younger hospital doctors. It was determined that the concept of job-satisfaction was an important aspect to pursue in the interview process in the context of this study.

2.5.3.3.3 Type of medicine

The concept of a holistic approach to medicine (Rowsell, Morgan, and Sarangi 1995; Steinhauser et al. 2011) was also noted as a key factor that attracted some to

general practice. This is complementary to studies where patient relationships were seen as a key attraction for general practice (Kiolbassa, Miksch, and Goetz 2011; Pawełczyk, Pawełczyk, and Bielecki 2007; Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007) because the very nature of general practice requires clinicians to deal with the individual as a whole, rather than focussing on the medical issue per se. Pawetczyk et al. (2007) noted that value orientation and need to serve society are other attributes related to primary care and factors in favour of general practice.

Other key attributes that have been noted in some studies are related to the scope and variety of practice in general practice (O'Connell 1997; General Practice Education & Training 2007). Conversely, other researchers (Knox et al. 2008) have confirmed that those people who did not pick primary care had low regard for issues such as scope of practice. This suggests that having a desire for an enhanced scope of practice could be a predisposition amongst certain individuals, and hence, impact on their career choice, but at the same time it could be inconsequential for others who did not rate this highly.

The conclusion was reached that the existing research was consistent in suggesting that those individuals who value patient interaction and relationships, had an interest in holistic medicine, enjoyed a variable scope of practice and were not daunted by the breadth and depth of knowledge required for general practice, were most likely to pick this specialty. It was noted that whilst there is some literature that suggests this could be linked to personalities (refer to section 2.5.3.1), it remained unclear whether these were more important than other factors, and should be explored further in the interview process.

2.5.4 Section summary

The purpose of this section was to emphasise an important part of the research study and establish the context for what was explored during the data collection and interview process. The section has provided a comprehensive review of the literature related to choice of specialty in relation to general practice careers across

the Australian and international context which has informed, in part, the interview schedule and questions for the research. The section reiterates that this literature review was undertaken simultaneously with the data collection, and that the analysis process evolved. In examining the literature, a plethora of factors were found to impact on choice of specialty, as explored by a number of studies. A unique perspective in understanding this literature has been provided by studying it under the structure of personal, social and professional factors (table 2.2). A number of gaps in the literature and how they relate to this study have also been noted. It was concluded that whilst there are a number of factors that impact on choice of specialty, there is not enough literature on how these factors relate to each other, or regarding the relative importance of these factors with respect to each other and the final decision process. Furthermore, the impact of these factors across the different cohorts in this study is unique, as it provides an opportunity to explore how these issues change or remain true over time. The discussion that follows in chapters 7 and 8 will expand on these issues further.

3 Research Design

3.1 Chapter Overview

This chapter presents the design framework of the thesis. In planning the design for this research, a number of texts were reviewed (Creswell 2003, 1998; Denzin and Lincoln 2003) to ensure that the design process would suit the nature of the research question and create optimal data collection and analysis conditions. The research purpose and paradigm were fundamentally constructivist, and an interactionistic approach was employed in conducting this study. The research design itself was based on grounded research (Whiteley 2004), with the framework adapted to meet the needs of the study.

Section 3.2 outlines the research enquiry paradigm, research framework and the theoretical perspectives used in this study. It explains why the constructivist paradigm was adopted and outlines the paradigmatic, ontological, axiological and methodological assumptions underpinning the research. In section 3.3, the research framework for this study is presented and reasons are given as to how phenomenology (Creswell 1998) and symbolic interactionism (Blumer 1969) have been used to form the theoretical foundations for this research. Section 3.4 provides an overview of the familiarisation study (Whiteley and Whiteley 2006) in which its role in enabling a firm understanding of the subject matter and the data collection process is explained. The chapter concludes with a brief summary of key aspects of the research design.

3.2 Research Paradigm, Framework and Perspectives

Willis (Willis 2007) defines a paradigm as a comprehensive belief system, world-view or framework that guides research and practice in a field. In the broadest sense there are two paradigms, qualitative (interpretivist) and quantitative (positivist); however, within each there are a number of particular approaches that define the research journey (Morgan and Smircich 1980). The positivist paradigm is built on the concept of “realism”, with researchers assuming that reality is independent

from the knower (Johnson and Onwuegbuzie 2004; Smith 1983). As such, the positivist researcher usually maintains some distance from the participant and what is being researched, and sees reality as “being” rather than “becoming” (Denzin and Lincoln 2003). In contrast, the interpretivist paradigm suggests that the researcher is part of the issue being researched and should interact with and affect the issues being researched (Creswell 2003).

Researchers have postulated that the research design is guided primarily by the paradigmatic assumptions of the study (Creswell 1998; Denzin and Lincoln 2003; Creswell 2003). Creswell (1998) argues that the chosen tradition of inquiry also, to a large extent, impacts on the research design since the ontological and epistemological viewpoints are essentially based on the paradigm used (Creswell 1998).

3.2.1 Tradition of enquiry and research framework

Creswell (1998) acknowledges five common traditions of enquiry related to qualitative research. This particular research sits in the qualitative paradigm which includes fields of enquiry ranging from objective (positivist) to subjective (constructivist) (Denzin and Lincoln 2003). Because it is primarily concerned with describing and exploring “lived experiences”, this study is best categorised as phenomenological, as described by Creswell (1998), and because phenomenological studies are noted to be best suited to a constructivist paradigm (Creswell 2003; Tashakkori and Teddlie 2003), this was the approach was adopted whilst conducting this research.

During this study, detailed in-depth interviews were conducted with the candidates to gain a firm understanding of their experiences. Upon commencing the research, it became clear that there were a number of deeper “meanings” that the participants in the study attached to their decisions, which then led them to particular actions. In order to better understand these deeper meanings, “Symbolic Interactionism”, as coined by (Blumer 1969), was used. These theoretical frameworks are further explained in section 3.4.

Figure 3.1 illustrates the research framework used in this study. This framework has been adapted from Whiteley's (2006) paper on the role and construction of familiarisation studies in qualitative research.

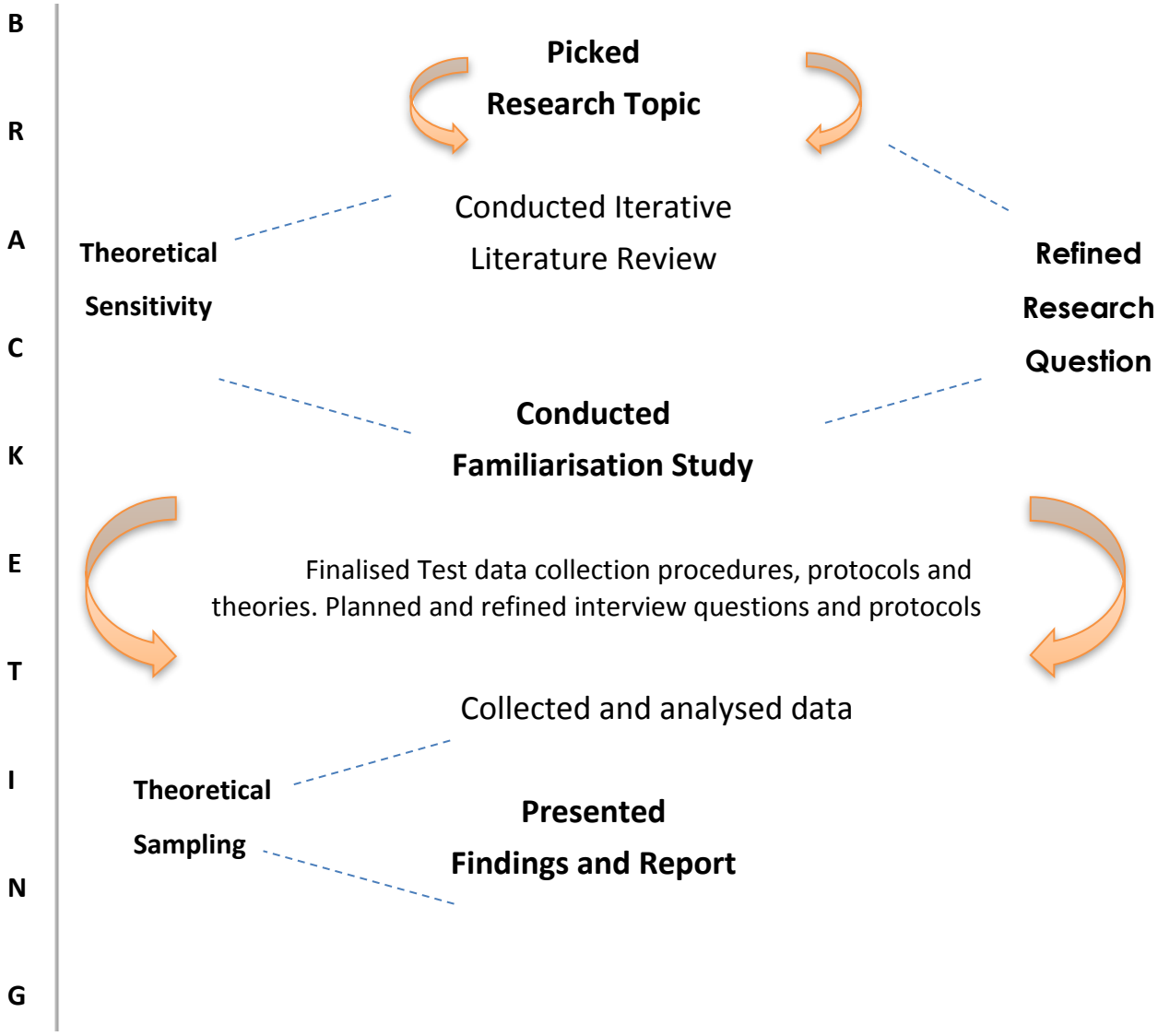


Figure 3.1 Research design adapted from Whiteley and Whiteley (2006)

A familiarisation study was included as part of this research in order to test the appropriateness of the theoretical frameworks and to explore the procedures, content and data collection tools to be used during the study. This familiarisation study provided a rich context for the research and assisted in ensuring that biases could be bracketed, as outlined by Moustakas (1994). The familiarisation study was

fundamental to establishing the research design. Establishing the research design was an iterative process that included a review of the literature, an assessment of the research questions and the actual interaction with participants during the familiarisation study. This itself was a classic representation of the constructivist research paradigm as outlined by researchers in this field (Lincoln and Guba 1985; Creswell 1998).

3.2.2 Methodological assumptions

This research was largely exploratory in nature, and its aim was to explore perceptions, describe experiences and offer insights. The primary emphasis was on understanding the situation, discovering patterns and drawing out the tacit knowledge of participants. These are all hallmarks of qualitative research methodologies (Cavana, Delahaye, and Sekaran 2001; Lincoln and Guba 1985; Strauss and Corbin 1990). The methodology used an inductive approach of inquiry and analysis to gain a better understanding of the subject matter.

3.2.3 Ideological perspectives

Researchers have outlined a vast range of ideological perspectives, such as Postmodernism, Critical Theory and Feminism, that can be used with qualitative research, and these approaches range from subjective to objective (Morgan and Smircich 1980; Creswell 1998). Typically, these perspectives can “guide a study” (Creswell 1998) and provide a particular “lens” to study the issue. After conducting the familiarisation study and considering the breadth of the research question itself, the decision not to use any particular ideological perspectives was taken; doing so could dilute the “essence” of the experiences of the participants or draw attention to particular areas of social interaction as seen by the researcher rather than the participants. It should, however, be noted that the adoption of particular ideological perspectives could provide new insights for future research in this area of study.

3.2.4 Theoretical perspective

The research process is primarily driven by certain paradigmatic, ontological, epistemological, axiological and methodological assumptions that govern the nature

and design of the research study. These assumptions guide the particular tradition of inquiry and are typically driven by the research objectives (Creswell 1998, 2003; Denzin and Lincoln 2003) rather than preferences of the researcher.

Since there was no ideological perspective, applied to the research it was important to ensure that the theoretical perspective allowed for a deep understanding of the subject matter being explored. Whilst the theoretical perspectives for this research point to a traditional grounded theory approach (Glaser 1978; Glaser and Strauss 1967), it has been argued that this perspective is not always applicable to business research (Whiteley 2004). Lingard et al. (2008) argue that grounded theory is primarily used to generate theories regarding social phenomena: that is, to develop higher level understanding that is "grounded" in, or derived from, a systematic analysis of data. As such, grounded theory is appropriate when the study of social interactions or experiences aims to explain a process (Lingard, Albert, and Levinson 2008). However, in this particular study, the aim was not to just explain a process, but to look at the range of factors (some of which have already been identified in the literature) that impacted the decision process of the participants in their career journey, contextualised within a complex personal, social and professional setting. As such, the it was noted that the context and nature of the research was more suited to Whiteley's (2004) elucidation of grounded research, which led to its use in conducting this study.

The following sections outline some of the ontological, epistemological, axiological and methodological assumptions, and the reasons behind their choice within the context of this study.

3.2.5 Ontological assumptions

This research drew on social interactions, experiences and perceptions of four distinct cohorts of medical professionals in different stages of their careers, i.e. medical students, pre-vocational hospital doctors, registrars in the general practice training program and practising GPs. Using Whiteley's (2004) approach to grounded research it was apparent that these cohorts represent significantly different "world

views" in relation to both their intergenerational differences and the particular stage of their individual personal and professional journey. As such, the ontological assumptions for this research embrace the existence of "multiple realities" (Creswell 1998; Denzin and Lincoln 2003). In this research, knowledge is thus comprised of multiple sets of interpretations that are part of the social and cultural context in which it occurs. As such, reality is "inextricably related" (Creswell 1998) to the consciousness of the individuals and their experiences, and is socially constructed (Berger and Luckmann 1966).

3.2.6 Epistemological assumptions

The epistemological decisions related to a study have to do with the nature of the relationship between the researcher and the participants (Creswell 1998). The ontology clearly outlined that there were multiple realities amongst the participants; but this also extended to the researcher conducting the research. It has been argued that the constructivist researcher is part of the research process itself and should be immersed in the data collection process (Strauss and Corbin 1990; Janesick 2000). Therefore, in order to gain a deeper understanding of the subject for this study, an attempt was made to lessen the distance between researcher and participants. This was aided by the familiarisation study, and was achieved by having multiple conversations and spending time with medical students, junior doctors, registrars and practising GPs. This was made easier due to the researcher's professional role in the health sector with access to related networks. The purpose was to ensure that the researcher had a deep understanding of not only the subject matter, but also of the participants' professional environment and journey to add to the richness of the data collection. Careful and conscious use of bracketing (Moustakas 1994) by the researcher ensured that, even though his familiarity with the research context assisted in the data collection process, the data collection focused on the research participants, rather than the one conducting the research.

3.2.7 Axiological assumptions

The epistemology warranted a constructivist approach and a deep immersive approach was taken. However, during the duration of the study, the researcher was

involved in the industry as the Chief Executive Officer of General Practice Registrars Australia Ltd (GPRA), the peak representative body for GP Registrars in Australia. The axiological assumption of this research implied that the researcher had pre-existing notions about the nature of the reality within the context of the study, which could bias his views. This required the appropriate use of bracketing, or epoche (Moustakas 1994; Creswell 1998), to ensure that the researcher's own values, though acknowledged and documented, did not impact on the interpretation of the experiences of the participants in this study.

3.3 Theoretical Framework

The ontology and epistemology of this research, required, in the first instance, a description and exploration of "lived experiences", which is described as a phenomenological study by Creswell (1998). The phenomenon itself, however, presented only a starting point, and the experiences of the participants assisted in extracting the "essence" of the phenomenon, which is referred to as transcendental phenomenology in the literature (Moran 2000). During the course of the familiarisation study, it became clear that there were deeper "meanings" (Blumer 1969) attached by the participants of the study to the experiences which impacted their decisions. This warranted the use of "Symbolic Interactionism", as coined by Blumer (1969) when conducting this research. The principle of reflexivity (Simon 1977) was also applied since it was ultimately the author's understanding, interpretation and representation of the research that delivers the findings at the end of the study.

Based on the above, two broad theoretical frameworks (phenomenology and symbolic interactionism) were acknowledged to underpin this research, and it was important to contextualise how these related to each other and to the study itself. The concept of reflexivity was an important factor of how the research was interpreted and applied. As such, an amalgamated framework (figure 3.2) was created using both phenomenology and symbolic interactionism as foundation pillars to guide the research study. Both perspectives were equally important within

the scope of this research and guided each other in an iterative process. The notion of reflexivity added the author's own understanding and interpretation of the lived experiences. This framework was reflected during the interview process and impacted on the types of questions that were asked and the manner in which the interview was conducted.

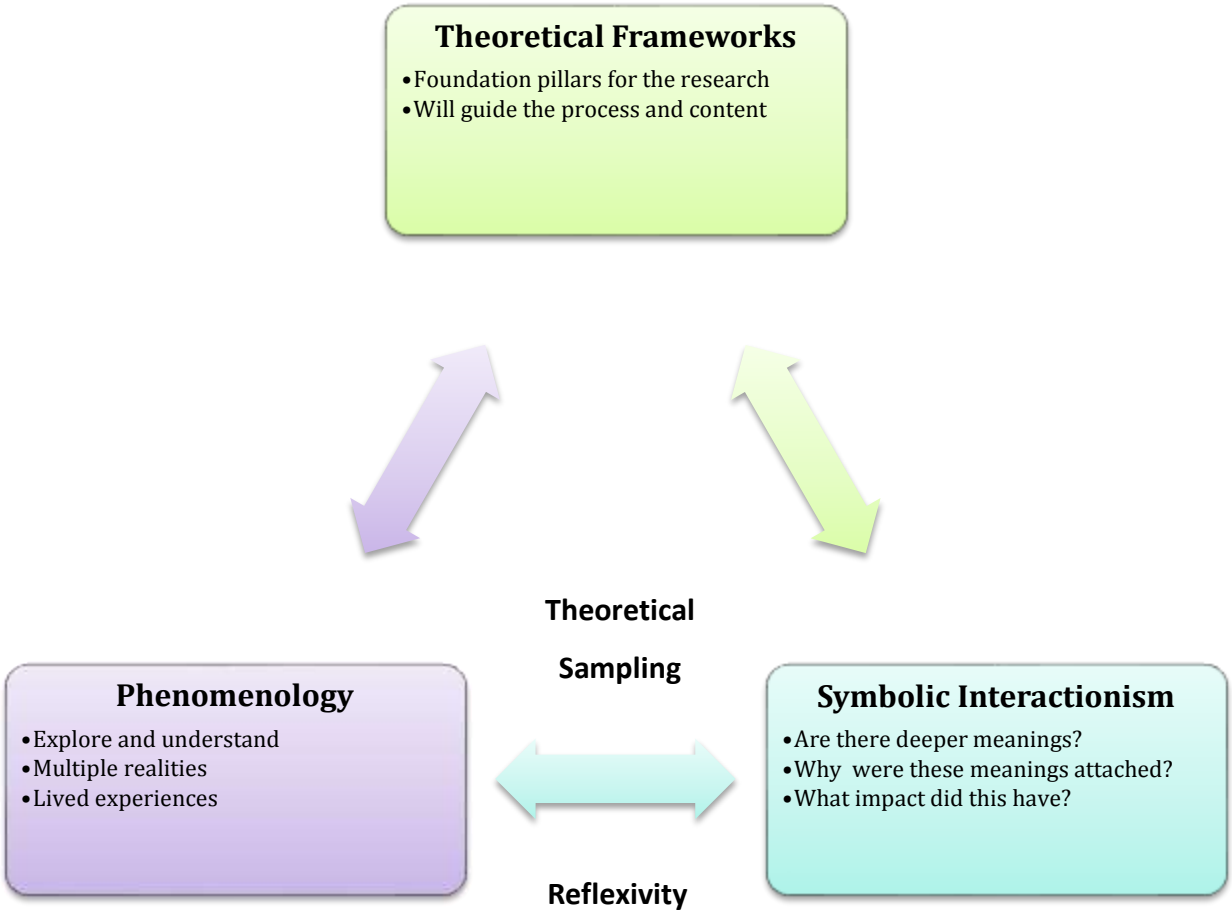


Figure 3.2 Theoretical framework for the research

To understand this framework, it is important to note that there is an underlying issue of hierarchy in the importance of the two theoretical frameworks and how they relate to the data collection progress. This became quite clear once the data collection process (in-depth interviews) commenced, since it was necessary to first explore the lived experiences of the participants before attempting to attach any meanings to the decision process or outcome. As the research evolved, this exploration added to the richness of the dialogue and allowed for a deeper understanding of and connection with the participant via a process known as theoretical sampling (Strauss 1987; Strauss and Corbin 1990). Strauss (1987) defines theoretical sampling as a selective process of data collection in the latter stages of the research that is driven by evolving constructs (Strauss 1987; Strauss and Corbin 1990).

In this particular research, the second step of the data collection process was to determine the meanings that individual participants attached to their "lived experiences". Whilst closely related to the outcome of the research, this would have been impossible to achieve without the first step. This iterative process of describing and learning from the lived experiences of the participants directed the scope of questioning during the data collection process. In some cases, it was observed that the participants had not consciously attached meanings to their experiences till after going through the interview process. This illustrated the importance of the theoretical sampling process, as outlined in figure 3.2, using the phenomenological perspective as a starting point.

3.4 Familiarisation Study

The familiarisation study in qualitative research has been compared to a pilot study in traditional quantitative research (Whiteley and Whiteley 2006) and is considered an essential component of the research design (Janesick 2000). The familiarisation study was a key part of the current research since it laid the foundation for the theoretical as well as the practical aspects of research design and methodology used in this study.

Whitely (2006) identifies two distinct types of familiarisation studies. The first is referred to as “immersion by osmosis” and is more aligned to an ethnographic approach where the researcher attempts to lessen the distance with the candidates, whereas, the second is a more planned approach directed by the needs of the data collection methods, the profile of the researcher and the theoretical perspectives used in the research (Whiteley and Whiteley 2006). The latter approach was used whilst conducting the familiarisation study for this research, as outlined in figure 3.3.

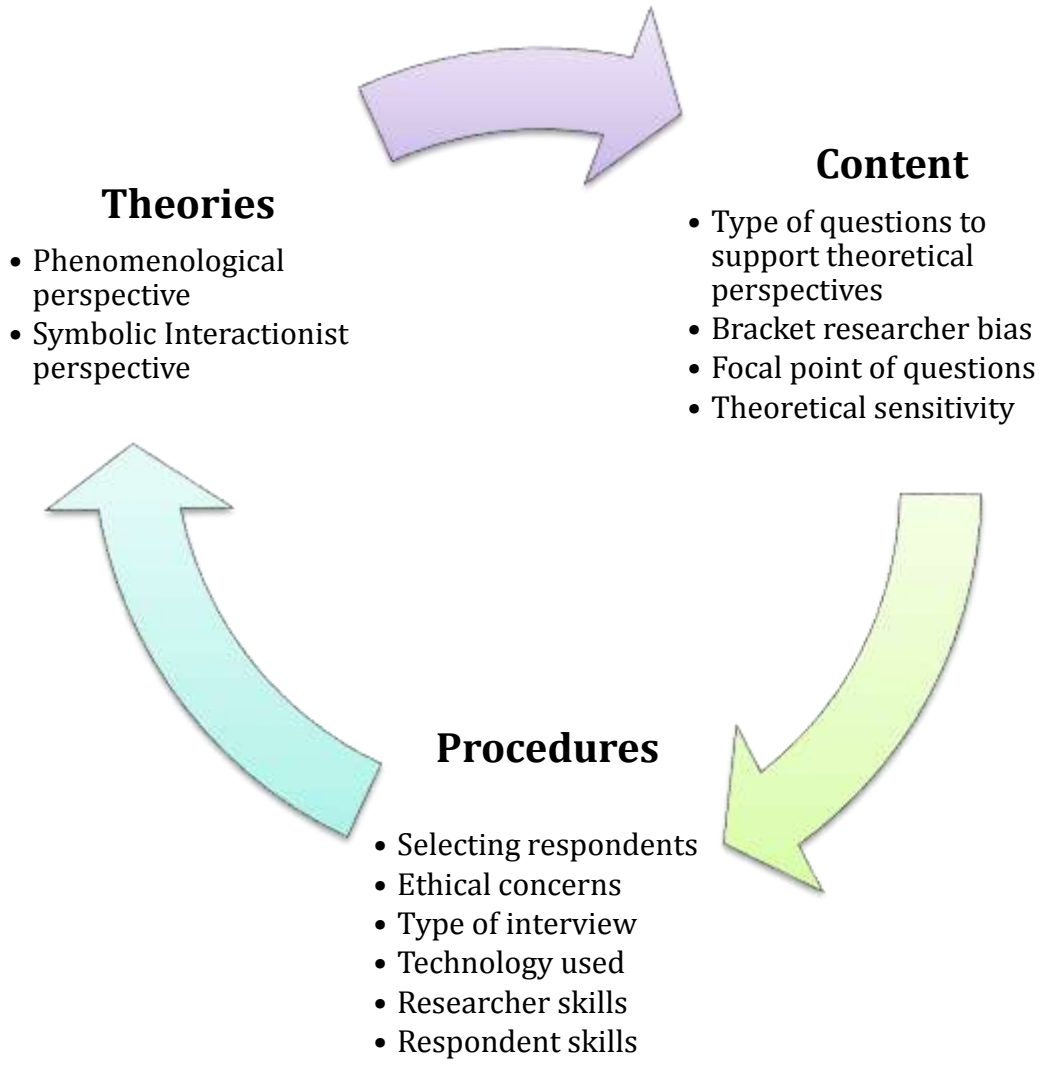


Figure 3.3 Familiarisation study: Theory, content and procedures

Constructivist research is an iterative process (Cavana, Delahaye, and Sekaran 2001; Creswell 1998, 2003), and this concept was captured during the familiarisation study conducted as part of the research as shown in figure 3.3. Whiteley (2006) introduces the concept of "theories, procedures and content" as essential segments of a familiarisation study. However, these segments are not distinct or linear phases, but rather a constant interation, as the researcher becomes more familiar with the concepts and scope of the research. This study demonstrated that the three domains were intricately linked, and it was only through an interative process of analysing and reconstructing the various elements of each segment that the familiarisation study was completed. These segments are discussed individually below, mainly to highlight the specific elements of each segment; however, this should not be taken as any representation of linearity or separateness of the process itself.

3.4.1 Content

From a content perspective, there were three objectives to be achieved through the familiarisation study. The first objective was to gain a very good understanding of the subject matter in order to increase theoretical sensitivity. This is considered to be an important personal quality for the researcher, who should have sufficient insight and the ability to give meaning and the capacity to understand the data within the context of the research to make decisions related to data collection and analysis (Glaser 1978; Strauss and Corbin 1990). To address the above, a selection of "key informants" (Creswell 1998) from the sector was interviewed during the familiarisation study. Key informants are especially knowledgeable about the subject of investigation, and offer unique information and insights, not available from other sources (Kumar, Stern, and Anderson 1993). The use of these interviews has been recognised to enhance the theoretical sensitivity (Glaser and Strauss 1967) of the researcher. To this end, key informants amongst each of the four cohorts participating in the research were identified and interviewed as part of the familiarisation study.

The second objective was to explore issues related to researcher bias and to appreciate the "multiple realities" (Creswell 1998) that exist. It has been suggested that early determination of the theoretical constructs within a grounded research approach paradigm may result in data that is tainted by the researcher's questions (Whiteley 2004). This was particularly important for this study, given the background of the researcher which had the potential of certain biases and pre-conceived notions on some of the broad issues related to the research. During the entire familiarisation process, the researcher used bracketing (Moustakas 1994) to clearly define and articulate biases and beliefs in the context of the research to preserve the quality of the data. This was done by keeping hand-written notes and recording self-directed audio memos after each interview, and preparing meticulously before each interview so as to keep the interview process free of researcher bias. Appendix 2 demonstrates how memos were used and coded.

The third objective was to interview a mix of participants to gain an understanding of the scope and diversity of content that might be generated and how this may differ for the various cohorts based on gender, background and scope of experiences. This was achieved by including a selection of participants, in addition to the key informants, representing a mix of gender, age and geographical location within Australia. This assisted in helping to define the scope and content of the type of questions that need to be included in the repertoire. It also proved to be particularly helpful in looking at some of the procedures and logistics that need to be considered for the purpose of the study.

3.4.2 Theories

During the familiarisation study, it became quite clear that there was a definite overlap between the two theoretical frameworks (phenomenology and symbolic interactionism) that underpin this research. Whilst this was foreshadowed as a possibility in the research proposal, the familiarisation study offered the opportunity to understand how those frameworks would interact with each other within the context and scope of this research.

The familiarisation study also provided an opportunity to test the paradigmatic, ontological, epsitemological, axiological and methodological assumptions used in the research. The familiarisation study assisted in gaining a deeper understanding of these issues and how they applied to the context of the study. This was an iterative process and allowed decisions to be taken such as the division of the interview questions into two groups, i.e. exploring what was experienced, and exploring the meaning of the experience. It also allowed for taking decisions on when to use phenomenological questions to get answers to "how" and "what" had been experienced by the participants, and when to use symbolic interactionist questions to determine the "meanings" that were attached to those experiences.

Thus, what started out as a theoretical construct became inextricably linked to the practical aspect of conducting the research as a direct result of the familiarisation study. This further defends the views of other researchers on the importance of familiarisation studies as an essential part of qualitative research (Janesick 2000; Whiteley and Whiteley 2006).

3.4.3 Procedures

One of the main functions of a familiarisation study is to explore, establish and refine the data collection tools and to determine the operational logistics of the data collection process (Whiteley and Whiteley 2006; Janesick 2000). Whitely (2006) argues that whilst these may be clearly obvious in many cases, the familiarisation study offers the perfect opportunity to test the procedures and make any refinements at an early stage of the research whilst also adding rigour to the research process. Simple things such as venues, technologies (digital recorders, Skype, tele-interviews), etc., were all able to be tested to ensure familiarity and appropriate usage during the study.

The familiarisation study also allowed for testing and practicing interviewing techniques. Initially, the questions were kept open-ended, with the researcher prompting the discussion rather than guiding it in a particular direction. This eventually evolved and enabled the process to be refined to allow for semi-

structured interviews that were used to explore the various concepts that emerged. For example, a process was developed where the participants were given an information sheet (Appendix 3) prior to the interview, followed by a verbal outline of the research at the start of the interview.

3.5 Chapter Summary

This chapter has provided an overview of the research design and the steps undertaken to finalise the design and related processes. It has been argued why this research fits under the constructivist paradigm as outlined by Creswell (1998), and the theoretical perspectives used have been described. The contention was made that whilst this research is not grounded theory research in the purest sense (Glaser and Strauss 1967), the process of theoretical sampling (Strauss 1987; Strauss and Corbin 1990) was used to guide the data collection. The use of Whiteley's (2004) construct of grounded research was offered as a structural basis for this study, and an amalgamated theoretical framework describing phenomenology (Creswell 1998) and symbolic interactionism (Blumer 1969) as methodologies guiding the research was presented. The chapter concluded with a detailed description of the familiarisation study based on Whiteley's (2006) work to outline how the process was conducted and to indicate its contribution and value to the research in determining and fine-tuning the research design.

4 Research Methodology

4.1 Chapter Overview

Over the years, there has been considerable debate over whether qualitative and quantitative methods can and should be assessed according to the same quality criteria (Mays and Pope 2000). Whilst qualitative methodologies are increasingly popular (Long et al. 2000), there is still some debate over issues related to the reliability, validity, and generalisability of qualitative research (Mays and Pope 2000). This chapter outlines key aspects of the research methodology. Section 4.2 outlines the data collection process, tools and candidate selection processes used to limit bias and ensure the rigour and reliability of the data collected. In particular, this section includes a discussion on why the particular tools were selected and used. Section 4.3 outlines how the sample size was determined, and explains the use of horizontalisation (Creswell 1998, 2003) and data saturation (Moustakas 1994) techniques as part of the methodology. Section 4.4 explores issues related to data quality, and explains how key issues related to quality, rigour, researcher bias and triangulation were addressed in the study. This is followed by a brief summary of the chapter.

4.2 Data Collection

4.2.1 Picking the right tool

Within qualitative research methodologies, numerous data collection techniques are available, including, but not limited to, focus groups, case studies, ethnographic studies and in-depth interviews (Denzin and Lincoln 2003; Janesick 2000). An early question, explored during the familiarisation study, was related to the use of the most appropriate data collection tool within the context of this study. This decision was primarily driven by the theoretical framework and the research objectives.

The previous chapter outlined the basis for the research design and described the theoretical framework, which is built upon the key constructs of phenonmenology and symbolic interactionism. This theoretical framework required a clear

understanding of the lived experiences of individuals and related meanings, as viewed by the research participants (see figure 3.3). For this reason, focus groups and in-depth interviews were the two methods that were considered for collecting data. Focus groups have achieved a prominence in marketing research, and the benefits have been illustrated by a number of authors, particularly in relation to collecting a variety of views on products and campaigns (Zikmund 1997). In-depth interviews do, however, come out on top in numerous areas, particularly in relation to uncovering subtleties, offering depth and clarity of data, and identifying spread and extent of opinions (Stokes and Bergin 2006).

In this study, the research objective and theoretical frameworks acknowledged the need for ascertaining deeper meanings that people attach to their lived experiences in an interactionist approach. For this reason it was thought practical to gather a broad spectrum of candidates from different cities, backgrounds and geographical locations to further reduce bias and add rigour to the study, as outlined in section 4.4. However, focus groups can have the disadvantage of adding cost and creating logistical problems if the participants are not located in the same geographic area. Therefore, it was determined that in-depth interviews would be most appropriate for this study. The appropriateness of this technique was further tested and confirmed during the familiarsation study, as outlined in chapter 3, section 4.

4.2.2 In-depth interviews

In-depth interviews can be structured, semi-structured or unstructured (Fontana and Frey 2000; Stokes and Bergin 2006). Webb (1995) describes unstructured interviews as a way “to get a single respondent to talk freely and to express detailed beliefs and feelings on a topic”(Webb 1995). Structured questioning requires the interviewer to ask a set of pre-established questions with little room for variation, whilst unstructured interviews are typically open-ended and do not follow a set pattern, allowing the participants to guide the discussion (Fontana and Frey 2000). Silverman (1993) identifies two views that an interviewer can take during the interview process—neopositivist and romanticist. The neopositivist view is focussed on capturing pure data by minimising researcher bias and influence, whilst the

romanticist position is focussed on exploring the inner world of the participant by establishing rapport and trust, and lessening the distance between the interviewer and the participant (Silverman 1993). Holstein and Gubrium (1997) introduce the concept of "active interviewing", where the interviewer's interventions transform the interview subject "from a repository of opinions and reasons or a wellspring of emotions into a productive source of knowledge"(Holstein and Gubrium 1997). More recently, researchers have postualted a third stance of "localist interviewing" (Potter and Wetherell, as cited by Alvesson 2003), in which the interview is seen as a social exchange enabling participants to draw on cultural and social resources to produce morally adequate accounts (Alvesson 2003).

Ultimately, the interview stance and style need to match the skills of the interviewer (Fontana and Frey 2000; Holstein and Gubrium 1997) and be suited to the environment and profile of the participants being interviewed within the context of the research (Fontana and Frey 2000; Whiteley and Whiteley 2006). All three types of in-depth interview techniques were used, starting with un-structured interviews, and progressively moving towards semi-structured and structured approaches. Establishing an appropriate interview style to support the data collection process was also given careful attention, as outlined in the following section.

4.2.2.1 *Determining interview technique*

The basic elements of the interview, as described by Fontana and Frey (2000), include issues related to gaining trust and establishing rapport, understanding the language and culture of the participant and determining how to present oneself as interviewer. The particular situation of this study involved participants who were highly intelligent professionals with advanced communication skills. In most cases, the context of the research itself was well known to the participants. During the familiarisation study, it was noted that establishing rapport and trust was fairly easy, given the background in, and knowledge of, the sector. Hence, the main emphasis was on drawing out the knowledge and views of the participants, whilst engaging in an open and sometimes intellectual dialogue on the issues being discussed.

In conducting the interviews, a combination of styles was used to achieve the desired results. It had been noted (chapter 1.6) that there was a risk of creating a bias and "directing" the interview to reflect the researcher's own perception of reality. This would have warranted the use of a more traditional neopositivist interviewing position where the interview is considered to be "a pipeline for transmitting knowledge" (Holstein and Gubrium 1997). However, it was discovered that tapping into the romanticist stance to test certain constructs allowed for a richer explanation of the meanings that the participants attached to their lived experiences, and was essential for addressing the interactionist aspect of the theoretical framework.

Alvesson (2003) outlines the problems with adopting purely neopositivist and romanticist positions to interviewing, and proposes a reflexive pragmatic view. Alvesson's (2003) reflexive pragmatic approach, also known as localist interviewing, was used broadly during the various stages of the data collection process, and it was noted that this flexible approach worked well with the participants, as well as with the subject matter.

The interviews during the familiarisation study were broadly unstructured since the purpose of this step was to gain a firm understanding of the research matter and to identify an appropriate interviewer approach that would be acceptable for the highly intelligent and professional people being interviewed. As the study progressed, a semi-structured approach was adopted to lead the discussion through key aspects and themes that were emerging. Finally, towards the latter stages of the data collection process, by which time most of the subject matter had been considered and was near the point of data saturation, a more structured and directed approach was undertaken. Similarly, in relation to the positions taken by the researcher, the initial stages of the research saw the researcher adopting a neopositivist position to ensure that the data collection process was uninhibited. However, as the research progressed and the the key constructs became more familiar, a more romanticist position was taken to test particular issues and confirm candidates' attitudes on a number of identified variables.

4.2.2.2 *Establishing rapport*

Establishing rapport is an essential element of any interview (DiCicco-Bloom and Crabtree 2006; Szolnoki and Hoffmann 2013). The definitions of rapport are diverse, but essentially, rapport involves two things: establishing a type of trust and respect for the interviewee and the information he or she shares; and establishing an environment that is safe and comfortable for the interviewee to provide the information that the interviewer is looking for (DiCicco-Bloom and Crabtree 2006; Fontana and Frey 2000). This is particularly relevant when the research project requires the collection of the subjects' interviews, as it is crucial that the events be described as they actually occurred. Spradley (1979) and DiCicco-Bloom and Crabtree (2006) describe four stages of building rapport during the interview process:

1. *Apprehension*: There is a lot of uncertainty, associated with the fact that there is no relationship between the interviewer and the interviewee. At this point, the interviewer is looking to get the interviewee to speak. Consequently, the first question should be broad and open-ended, easily associated with the intent of the research, and should make the interviewee feel at ease. As the interview progresses, and responses are given, the interviewer should incorporate the words spoken by the interviewee as much as possible, which encourages the interviewee to elaborate on his or her answers without being led by the interviewer.
2. *Exploration*: This stage begins when the interviewee is already feeling some degree of comfort and ease with the interviewer and his or her questions. Here, the answers become more detailed, and descriptions of situations or events are more complex than before. This is a phase of learning, listening and establishing an environment that stimulates bonding and sharing between the two parts.
3. *Cooperation*: In this stage, the relationship between both participants has reached a level where there is even satisfaction coming from the interview process. Here, it is appropriate for the interviewer to clarify any points deemed necessary. This may also be the appropriate time to talk about more

sensitive issues that could be uncomfortable to talk about in the beginning of the process.

4. *Participation*: This stage reflects the greatest degree of rapport, and at this point the interviewee takes on the role of guiding and teaching the interviewer.

The researcher practised establishing rapport during the familiarisation study, and used a number of techniques to assist in this process, including dressing to match the style of the partipants, making small talk and mirroring body language. Familiarity with the sector was an advantage which assisted in moving through the above stages in seamless conversation.

4.2.2.3 *Location, style and use of technology*

In-depth interviews can be done in variety of ways. The most ordinarily used strategies or "modes" of information collection include the following: (1) face-to-face interviewing, in which a questioner commonly visits respondents in their home or at their work and administers the interview in person; and (2) telephone interviewing, in which respondents take part in a study either by means of a settled line phone or their cellular telephone (Roberts 2007). Advances in information and communication technology have stretched this scope of alternatives, and various types of computer-mediated communication (CMC) tools have been developed. CMC is defined as a process where messages are electronically transferred from a sender to one or more recipient(s), both in synchronous (in real time) and in asynchronous (independent of time and place) setting. Video interviews (mostly using Skype) fall into the former category (Opdenakker 2006).
Each of the above three methods were during the course of this study, and a brief summary of their individual attributes is included below.

4.2.2.4 *Face-to-face interviews*

Studies using face-to-face interviews have a few clear characteristics of being organised, adaptable and versatile. They are focused around personal interaction and can be controlled within the interview environment. Physical stimuli (i.e. visual, body language, expressions) can be used, and respondents can be watched (Szolnoki

and Hoffmann 2013). Due to this synchronous communication, face-to-face interviews have a clear advantage of being able to use a range of social cues, voice, sound, and non-verbal communication to aid in the interview process. This can often provide the questioner with a great deal of additional data that might be added to the verbal replies of the interviewee during an inquiry.
A disadvantage of this type of synchronous correspondence is that the replies of the interviewee are more spontaneous, without extended reflection (Opdenakker 2006). Other disadvantages include higher interviewer bias (visibility can lead to disturbing interviewer effects, where the interviewer guides with his or her behaviour the interviewee in a particular direction), high cost per respondent, geographical limitations and time pressure on respondents (Szolnoki and Hoffmann 2013).

4.2.2.5 *Telephone interviews*

Due to the non-concurrent correspondence of location, one of the key advantages of telephonic interviews is the ability to reach out to a wider range of candidates. Boland et al. (2006) provide the following summary of the advantages of these types of interviews:

- Enabling wide geographical access. Interview travel time and associated costs are eliminated, and interviewers do not have to physically visit study regions.
- Empowering researchers. Individuals that are time poor and hard to access face-to-face, such as young parents or busy professionals, can be contacted more easily.
- Creating easier access. Individuals in locales which have restricted access (such as hospitals, religious communities, prisons, etc.) are more easily accessed.

One significant advantage of the telephone interview noted by Boland et al. (2006) is that it allows respondents to gain perceived anonymity; telephone surveys can be exceptionally valuable in gathering sensitive information.

The main criticism of this type of interview is the reduction of social cues. The interviewer does not see the interviewee, so some of those cues cannot be used as a source of extra information (Opdenakker 2006). Other potential detriments of phone interviews include questioner predisposition and lower reaction rates (Szolnoki and Hoffmann 2013).

4.2.2.5.1 Online interviews

Janghorban et al. (2014) extol the virtues of technological advances and the advent of online interviews. They note that online interviewing has overcome time and financial constraints, geographical dispersion, and physical mobility boundaries, which have adversely affected onsite interviews. They outline a range of online interviewing techniques that can be either asynchronous (emails, bulletin boards, discussion groups) or synchonous (chat rooms, instant messengers and video conferencing).

Janghorban et al. (2014) note that these tools encourage the participation of interviewees who might otherwise have time and place limitations preventing them from to participating in face-to-face interviews, and they explain that some online interactions are comparable to face-to-face interviewing techniques because of the presence of nonverbal and social cues. However, “head shots” provided by web cameras are not ideal in that they create obstacles to observing all of the participant's body language. Video interviews retain some of the advantages of telephonic interviews related to anonymity which can facilitate more candid and reflective input (Janghorban, Roudsari, and Taghipour 2014).

4.2.2.6 *Interview logistics*

Whilst conducting the research during the familiarisation study, it was noted that the candidates being interviewed (given the nature of their profession) were comfortable in using all three forms of interview formats as outlined above. All four cohorts being interviewed comprised extremely busy and largely time-poor professionals, who typically had narrow windows of opportunity to participate in the research. Last-minute cancellations, delays to the starting times and long lead

times were the norm, and required the researcher to be versatile and accommodating. For the most part, the researcher chose to adapt to the needs of the candidates. It was decided best to follow the participants' lead in determining issues such as interview location and the use of telephonic and video interviews.

Different timings and locations suited the various cohorts. The medical students typically preferred locations on campus or close to the university—a quiet café was the norm and a coffee or tea was well appreciated. The pre-vocational doctors could only be interviewed on their days off or after-hours, with the interviews taking place in a café or the participants' home. The registrars and GPs were quite happy to be interviewed between patients or over lunch; however, as this could lead to a hurried interview, this practice was normally avoided. Late evenings and weekends proved to be the best times to interview this group.

For face-to-face interviews, the venue was typically chosen by the participant from suggestions put forward by the researcher. The locations ranged from participants' personal homes to cafes or medical practices and offices where they worked, and these were all largely satisfactory.

Most participants requested telephonic and VOIP (voice over internet protocol) interviews due to convenience, and 70% of the interviews used this approach. All participants appreciated the offer of the researcher to pay for a meal or beverage, but this was not always expected nor was it always taken up. The researcher chose to dress to match the style of the participants, using jeans and t-shirt with students and pre-vocational doctors, and collared shirts with registrars and GPs. This helped to establish rapport. However, familiarity with the sector was the most important factor in establishing a quick rapport. The researcher's ability to make contextual small talk with the participant before the formal interview was particulalry helpful in establishing rapport for telephonic and web based interviews.

4.3 Selection, Sampling and Size

4.3.1 Sample size

Sample sizes and participant selection in qualitative research have been the topic of much discussion (Sandelowski 1995; Marshall 1996). Researchers essentially agree that obtaining an adequate sample size for qualitative research is very important (Creswell 1998, 2003; Denzin and Lincoln 2003); however, researchers note that large sample sizes are not in themselves relevant (Saunders, Lewis, and Thirnhill 2009) and the key determinant of sample size is when data saturation is reached (Creswell 2003). Sandelowski (1995) outlines that the choice of research participants should be determined by the focus of the study. He argues that participant choice, in qualitative research, is ultimately a matter of judgement and experience in evaluating the quality of the information collected against the uses to which it will be put (Sandelowski 1995).

Researchers have noted that qualitative research is, invariably, time and resource intensive (Saunders 2012; Creswell 1998), and the choice and number of research participants is generally constrained by what is practicable (Sandelowski 1995; Saunders 2012). There can be other logistical issues that can impact on participant selection such as gaining access (Saunders 2012) and lack of financial resources (Fink 2003). Merriam (2009) further notes that randomised selection of participants does not always result in meeting the aim of the study, and researchers are often constrained in the amount of data that can be collected and analysed. Hence, careful selection of participants becomes even more important (Fink 2003; Saunders, Lewis, and Thirnhill 2009).

Some researchers, such as Buchanan, Boddy, and McCalman (1988), have noted that an “opportunistic approach” to gaining access and choosing research participants can often be the best way to conduct research. However, Creswell (2003) suggests that participant selection for qualitative research must be purposeful, and participants should be selected based on their ability to inform the research questions and enhance understanding of the phenomenon under study. This view is backed by a number of other researchers, who agree that decisions regarding

selection should be based on the research questions, theoretical perspectives, and evidence informing the study (Kuper, Lingard, and Levinson 2008; Creswell 2003; Fink 2003; Saunders, Lewis, and Thirnhill 2009).

Whilst designing and conducting this research, there was no pre-determined target with reference to sample size. However, a number of strategies to ensure that the resulting participant pool was adequate given the context of the study were employed; these strategies are described below. The final sample size and choice of participants was determined via an iterative process by using a number of techniques, which are discussed in the next section. This approach is consistent with recommended strategies for qualitative research (Creswell 1998, 2003; Denzin and Lincoln 2003).

4.3.2 Participant selection and sampling

Two broad sampling techniques can be used to select participants: non-probability (non-random) or probability (random) sampling. Saunders et al. (2009) note that non-probability sampling techniques allow for the choice of candidates to be based on the researcher's judgement regarding the characteristics of the population that are important in relation to the data required to address the research aim. In contrast, probability sampling techniques randomly select each participant, thereby eliminating the researcher's judgement from the choice of actual participants (Saunders 2012).

Marshal (1996) and Saunders (2012) explain that there are three broad ways to generate participant samples for qualitative research:

- *Convenience Sampling* (probability): Involves selection of most accessible subjects and is least rigorous.

- *Judgement Sampling* (non-probability): Can involve developing a framework of the variables that might influence an individual's contribution, and is

based on the researcher's practical knowledge of the research area, the available literature and evidence from the study itself.

- *Theoretical sampling* (non-probability): Relies on the iterative nature of the research design, whereby the sample is theory driven to a greater or lesser extent.

In this particular study, the judgement sampling technique was primarily used to ensure that the participants selected were well-suited to answer the research questions. However, elements of probability sampling were integrated to strengthen the selection process by providing a level of impartiality and objectiveness. To achieve this, key attributes of the participant pool relevant to the research question and the focus of the research were identified. This particular process is noted to be a common approach to judgement-based sampling, and is well-acknowledged in the literature (Marshall 1996; Sandelowski 1995; Mason 2010; Denzin and Lincoln 2003).

The importance of the variables was tested in the familiarisation study to determine if “key informants” (refer chapter 3) agreed with the potential impact of these attributes on the quality of the information collected. This was further confirmed via member checks and industry experts to ensure that the key variables were being captured. Finally, a matrix was created, as outlined in table 4.1, and a process was undertaken to ensure that the final participant selection pool included these attributes.

Table 4.1 Participant selection matrix

Participant Selection Matrix				
	Key attributes			
Cohort Type	Gender Balance	Rural-Urban Representation	Stage of training & Length of career spread	Age Spread
Medical Students	X	X	X	X
Pre-vocational Doctors	X	X	X	X
GP Registrars	X	X	X	X
Practising GPs	X	X	X	X

Whilst ensuring that the selected participants met the above attributes, a probability sampling process was utilised to strengthen the participant selection process. This was achieved by randomly sourcing participants by advertising through an industry database. As the data collection process progressed, a more targeted approach that relied on both judgement and theoretical sampling techniques, as outlined by Marshal (1996), was utilised. This process was undertaken simultaneously whilst accommodating for data horizontalisation and data saturation, as discussed below. The complete participant classification sheet is available in Appendix 4.

4.3.2.1 *Data coding*

All interviews were recorded using a digital recorder. The recorded data collected during the interviews was transcribed verbatim by utilising professional transcriptionists via an online service. Each transcript was manually checked by the researcher for accuracy and consistency. In addition to the interviews, the researcher's audio memos for each interview were also transcribed. The transcripts of all the interviews and memos were uploaded into the software program QSR NVIVO® (Appendix 2). Initially, printouts of all the transcripts made use of a combination of different coloured highlighters to start the coding process. Three

interviews using this approach were coded to get an outline of the themes that were emerging. These themes were then set up as individual nodes within QSR NVIVO® and recoded using the software. After this point, all interviews and memos were directly coded within the QSR NVIVO® software. The QSR NVIVO® software was of particular value in this study for data management, given the large quantity of data. The capacity of the system for storage, retrieval, recoding and multiple coding of the text and references meant that the coding process was more manageable than if undertaken manually.

Researchers have argued that computer software is no substitute for the insight and intuition that emanates from the work of the researcher (Coffey and Atkinson 1996). This view is emphasised by Denzin and Lincoln (2000, p.805), who state that "[i]t is particularly important to emphasise that using software cannot be a substitute for learning data analysis methods. The researcher must know what needs to be done, and do it. The software provides tools to do it with". As such, for this study, the auto-coding feature within the software was not used out of concern that it might not pick up key themes. To maintain coding consistency and accuracy, a random number of interviews were also coded by a research assistant and checked against the researcher's coding to identify differences. This comparison was done early during the coding process and the coding differences were discussed with QSR NViVO training staff and the coding style and technique were adjusted to ensure that coding remained consistent and accurate. This is a common triangulation technique used in research and ensures coding is replicable(Creswell 2003). These codes were attached to nodes that formed the basis from which themes and categories could be determined. The QSR NVIVO® program has several cross-reference and retrieval features that allowed for the compilation of data sets for comparison and analysis in the formation of themes and categories relating to the interview questions (Richards 2005; QSR 2002).

Each respondent was allocated a pseudonym, which acted as an identifier. This allowed for both respondent confidentiality and identification by the researcher. The pseudonyms are explained as follows:

- MS1 XX, PGY2 XX GPR3 XX: The first two letters indicate whether the participant is a medical student, junior doctor or GP registrar. The numeral indicates the year of study (e.g. 1=first year.), and the last two characters is the name code assigned to that particular participant.

- GP XX, GP XX: In this case, the first two letters represent that the participant is a practising GP, and the next two characters is the name code assigned to that particular participant.

4.3.2.2 *Data horizontalisation*

Moustakas (1994) describes data horizontalisation as a key part of research methodologies. It refers to the process in which the data collected is laid out for examination, and each piece of data is treated with equal weight. He notes that during the horizontalisation process, all elements of the phenomenon both from the participant's experience as well as from the description of the conscious experience are captured and given equal importance and consideration. During this process, the key attributes of the phenomenon are recognised and described, and listed as individual constituents, before being linked thematically to derive a full description (Hays and Singh 2012; Moustakas 1994; Merriam 2009).

A key part of the horizontalisation process is to ensure that all pieces of data have the same value at the beginning of the data analysis stage, and they are then organised into clusters or themes (Conway 2014; Merriam 2009). This ensures that, by treating all aspects of the lived experience as equally important, the researcher is less likely to be distracted away from a truthful interpretation of the experience (Sandberg 2005; Moustakas 1994). Conway (2014) talks further about different perspectives during data analysis, referring to "noema", or the phenomenon as perceived through the eyes of the participants (including the researcher); and "noesis", i.e. the actual, real experience. He argues that in qualitative research, noema and noesis apply to each individual phenomenon, and it is the researcher's responsibility to portray both the perceived experience and the actual experience.

The process of horizontalisation allows the objectivity needed to be able to explore these experiences adequately (Conway 2014).

During this study, a combination of Excel spread sheets (Appendix 5) and QSR NVIVO® computer software was used to manage the horizontalisation process. The data was captured and examined carefully. Broad clusters, or "parent nodes", were established under the banner of personal, professional and social factors, in line with the research objective and the data recorded under each parent node. In the initial stages, the data was given equal weighting and importance, and was treated as individual elements. As the data collection progressed, the data was thematically linked under each parent node, and sub-clusters or "nodes" were established.

This was an iterative process, and the node tree, as outlined in Appendix 6 and 7, was the outcome of numerous incremental changes. New nodes were established and older nodes collapsed, until a picture began to emerge, which illustrated the key issues that were impacting on the participants' decisions in selecting their careers within medicine. During this process, the scope of the research was established and the dominant themes that would be explored as part of this study were noted. A final representation of the node structures can be found in in appendix 6.

4.3.2.3 *Data saturation*

The decision to stop collecting further data is an important one in any study. The process of determining whether enough data has been collected can be a difficult (Creswell 1998), and sometimes subjective (Merriam 2009), process. In qualitative research, this is achieved by utilising a technique known as data saturation. Data saturation occurs when the researcher is no longer hearing or seeing new information during the data collection process (Creswell 2003; Mason 2010). Researchers have noted that the sample size should be such that it prevents the collection of repetitive and, eventually, superfluous data (Mason 2010; Merriam 2009). There are various reasons for this, but the most relevant is that continuously collecting more data does not necessarily translate into more or richer information (Merriam 2009; Denzin and Lincoln 2003).

Merriam (2009) argues that whilst samples for qualitative studies are generally much smaller than those used in quantitative studies, they must be large enough to ensure that the important perceptions are collected. She notes that, regardless of the research area, different participants are very likely to hold diverse opinions. She further argues that frequencies are rarely important in qualitative research, as one occurrence of the data is potentially as useful as many in understanding the process behind a topic (Merriam 2009). Qualitative research is an iterative process, and the researchers analyse their data throughout their study (Denzin and Lincoln 2003; Creswell 2003). Researchers have noted that when there is a judgement of diminishing returns, there is little need for more sampling (Simon 2010; Merriam 2009; Given 2008). In practice, this corresponds to the point where new data only confirms the already identified code and category patterns.

During this study, a two-pronged approach was used, as discussed earlier. The first consideration was to ensure that the identified attributes in the participant selection pool (table 4.1) were met, and the second was to ensure that data saturation was achieved across the emerging themes. As the data collection progressed, it became apparent from the data that saturation had been achieved. This was further evidenced from the fact that no new themes (nodes) were emerging, and the existing nodes had multiple sets of data coded against them, as represented in appendix 5 and 6. At this point, it was decided that saturation had been reached and the data collection process was complete.

4.4 Rigour, Trustworthiness and Triangulation

The validity of qualitative research is often referred to as “trustworthiness”, or “credibility” (Denzin and Lincoln 2003; Creswell 2003). Establishing data trustworthiness is of significant concern for qualitative researchers (Given 2008) and it is important to incorporate appropriate strategies to address the issue of rigour and establish trustworthiness for the research. Lincoln and Guba (1985) identified credibility, transferability, dependability and confirmability as four key attributes

that establish rigour in qualitative research. This has been further supported by a number of authors (Creswell 2003; Merriam 2009; Given 2008), and forms the foundation of establishing rigour in qualitative studies. A summary of these strategies is included in table 4.2.

Herchel (1999) discusses the notion of process believability, which is represented by the coherence and rigour of the data collection principles and procedures, together with strategies for ensuring a clear and objective presentation of information. He suggests that the believability of the findings is enhanced by evidence such as confirming evaluation of conclusions by research participants, convergence of multiple sources of evidence, control of unwanted influences, and theoretical fit (Herschell 1999). Given (2008) notes that credibility is related to construct validity and can be evidenced by establishing inter-subjective validity, whereby understanding of the subject matter is tested with the participants through continuous social interaction. It has also been suggested (Ryan, Coughlan, and Cronin 2007) that elements such as writing style, report title, researcher qualifications and other documentation can further add to process believability and trustworthiness of the research.

Regardless of the method used to establish rigour and trustworthiness in the research, most authors agree that a key measure of the believability of conclusions comes from utilising multiple triangulation techniques (Creswell 2003; Denzin and Lincoln 2003; Herschell 1999; Lincoln and Guba 1985). According to Creswell (1998) and Denzin (2003), triangulation of data collected remains one of the most important methods of ensuring rigour in any qualitative study. Creswell (1998) notes that, with phenomenological research, triangulation strategies are not as explicit as with some of the other frameworks. He outlines a number of strategies, such as clarifying researcher bias, establishing inter-subjective validity, member checks and reader verification, to achieve this (Creswell 1998).

In this study, careful attention was given to issues related to rigour, and a number of identifiable, replicable and auditable processes and strategies to triangulate the

data were incorporated. In particular, care was taken to ensure that the key attributes of triangulation, as identified by Creswell (1998), and broader techniques, as supported by other researchers (Lincoln and Guba 1985; Denzin and Lincoln 2003; Herschell 1999), were explicitly included in the research methodology. The following specific techniques ensured data triangulation in this study:

- *Clarifying researcher bias*: Memos and bracketing were actively used to acknowledge any potential biases, assumptions and interpretations of the subject matter that emerged during the research process. This is further discussed in chapter 5.
- *Establishing inter-subjective validity*: The understanding of the subject matter was tested in an iterative manner through ongoing social interaction with the research participants to ensure the key issues were consistent with participants' views.
- *Performing member checks*: Twenty percent of the participants were approached to perform member checks on the data collected and the analysis to validate the accuracy and credibility of the report.
- *Using reader verification*: Two independent supervisors read and advised on the content of the research to ensure it represented a rational analysis of the logic of the documented experience.

Table 4.2 outlines a summary of the strategies and techniques implemented in this study to address the key issues of credibility, transferability, dependability and confirmability, as outlined by Lincoln and Guba (1985).

Table 4.2 Summary of strategies used to ensure rigour in the study

Key Attribute	Description Adapted from Lincoln and Guba (1985)	Strategies Implemented
Transferability	Refers to evidence supporting the generalisation of findings to other contexts. Transferability is enhanced by detailed descriptions that enable judgments about a "fit" with other contexts.	• The study is clearly documented with detailed description of all stages of research design and methodology included. • The methodology described can be used in a number of different settings. Whilst this can be used to explore career decisions in a different industry, it can also be used for exploring any other issues with medical professionals.
Dependability	Refers to the existence of evidence to support the claim that similar findings would be obtained if the study were repeated. Dependability is enhanced by strategies such as audit trails, rich documentation, triangulation, inter-coder or inter-observer agreement and code-recode consistency.	• The research can easily be replicated, as described in the study. A clear audit trail is available via QSR NVIVO® coded data, interview recordings and transcripts. • Inter-coder agreement was established by using a research assistant to code 20% of interviews and check for consistency. • Code-recode consistency was established by cross checking coding with research assistant. • Inter-observer agreement was established by supervisor input and member checks.

Key Attribute	Description Adapted from Lincoln and Guba (1985)	Strategies Implemented
Confirmability	Refers to objectivity (neutrality) and the control of researcher bias. Recognising potential sources of bias and factoring them into study design enhances confirmability.	• Researcher biases were noted and explicitly stated in the research. • Memos and bracketing were used to limit and control researcher bias.

Credibility	Refers to the believability of the findings, i.e. the congruency of the findings with reality. Methods to increase credibility include confirming evaluation of conclusions by research participants, convergence of multiple sources of evidence, etc.	• Multiple triangulation techniques were in this study including:
		  ○ inter-subjective validity
		  ○ member checks
		  ○ reader verification.
		• Two supervisors were used, one of which was an industry expert, to further ensure that the conclusions reached were rational and believable.

4.5 Summary

This chapter has provided a detailed overview of the research methodology, and outlined the key steps related to data collection, participant selection, sampling techniques and establishing rigour. A description of how the methodology links to the research design and the research objective was given. The appropriateness and use of in-depth interviews as a data collection tool were argued and explained. Also discussed were interviewing styles, techniques and related logistics, including the use of technology such as web interviews to aid the interview process. The use of sampling techniques and participant selection were discussed, and an outline of how data horizontalisation (Moustakas 1994) and data saturation (Creswell 1998) were achieved was presented. The chapter concluded with an explanation of the key triangulation techniques used to establish rigour, as outlined by Guba and Lincoln (1985) and Creswell (1998). The chapter is particularly useful for readers attempting to replicate the research or wanting to research similar issues in different contexts.

5 Analysis Framework and Coding Structure

5.1 Chapter Overview

The analysis of qualitative data is an iterative process and occurs continuously during the period of the research, with the researcher's mind acting as the analytical tool (Cavana, Delahaye, and Sekaran 2001). This chapter outlines the data coding and analysis process that was used to establish the emergent themes in this study. Section 5.2 outlines the analysis framework, and section 5.3 provides a detail of the coding structure and how this was derived. All analysis was based on transcription of in-depth interviews with each participant. The chapter concludes with an outline of the final coding structure and emergent themes. The findings discussed in the following chapter are based on this final structure.

5.2 Data Analysis Framework

Interpretive analysis is generally conducted in three stages: deconstruction, interpretation, and reconstruction (Miles and Huberman 1994). These stages occur after the data has been prepared for analysis (i.e. the recordings of the interviews have been transcribed and the transcripts checked for accuracy, etc.). A brief description of these stages, adapted from Miles and Huberman (1994), is presented below:

- **Deconstruction**: This refers to breaking down data into component parts in order to see individual themes.
- **Interpretation**: This follows deconstruction and refers to making sense of and understanding the coded data. It involves comparing data codes and categories within and across transcripts and across variables deemed important to the study.
- **Reconstruction**: This refers to recreating or repackaging the prominent codes and themes in a manner that shows the relationships and insights derived in the interpretation phase, and that explains them more broadly in light of existing knowledge and theoretical perspectives.

The interviews were designed to explore three key areas. First, the participants were asked to answer some demographic questions related to gender, origin, early influences and type of medical school they were attending. Second, the participants were asked to comment on the range of personal, social and professional factors that influenced their consideration when choosing their specialty. Third, the participants were asked probing questions to try and establish which, in their circumstance, were the most important factors impacting their final choice of specialty.

Stage 1 of the data analysis process consisted of four key phases and was undertaken for each interview, as illustrated in figure 5.1.

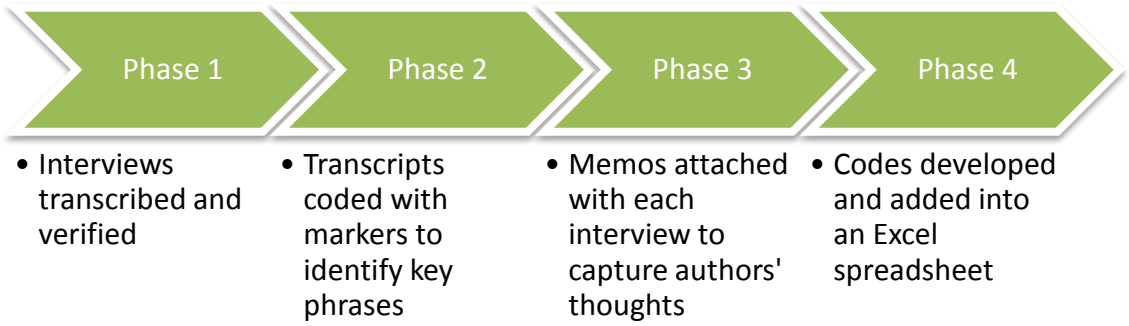


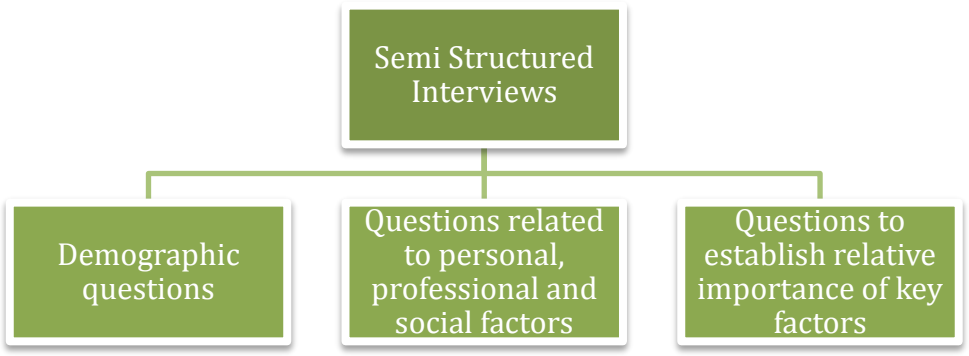
Figure 5.1 Data analysis stage 1

The phases, as outlined in figure 5.1, were designed to develop the primary knowledge and understand all data that emerged from the interview process. Transcribing of the data was undertaken via an online transcription service with verification performed by the researcher. Each participant's transcribed interview was allocated a code name (refer section 4.3.2) to preserve confidentiality.

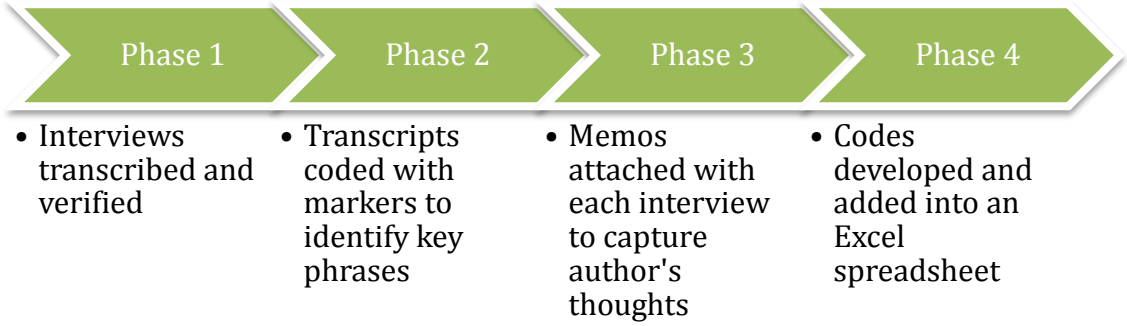
This process was conducted manually for the first five interviews, and the emerging codes were captured and inserted into an Excel spread sheet. Based on the nature of the codes, these were broken into the domains of personal, social and professional factors, in line with the objectives of the study. This is represented in appendix 5 and 6.

Stage 2 of the data analysis introduced the use of the software program QSR NVIVO® (QSR 2002). The transcribed interviews were copied into the software. The key texts and phrases, manually coded in Stage 1, were organised into parent nodes and child nodes, representing key categories. There was a significant volume of data at the start of the analysis project, and multiple categories were formed and explored. As these categories were examined, it became clear that broad themes linked the categories. Some of these were merged into others, and others were renamed. A few categories had no direct bearing on the study and were removed. As a result, the themes and categories became clearer, and the final themes were established.

Figure 5.2 depicts the analysis framework that formed the basis for the development of the key themes and categories for this study. The final representation of the node structure is available in Appendix 6.



DATA ANALYSIS STAGE ONE



DATA ANALYSIS STAGE TWO

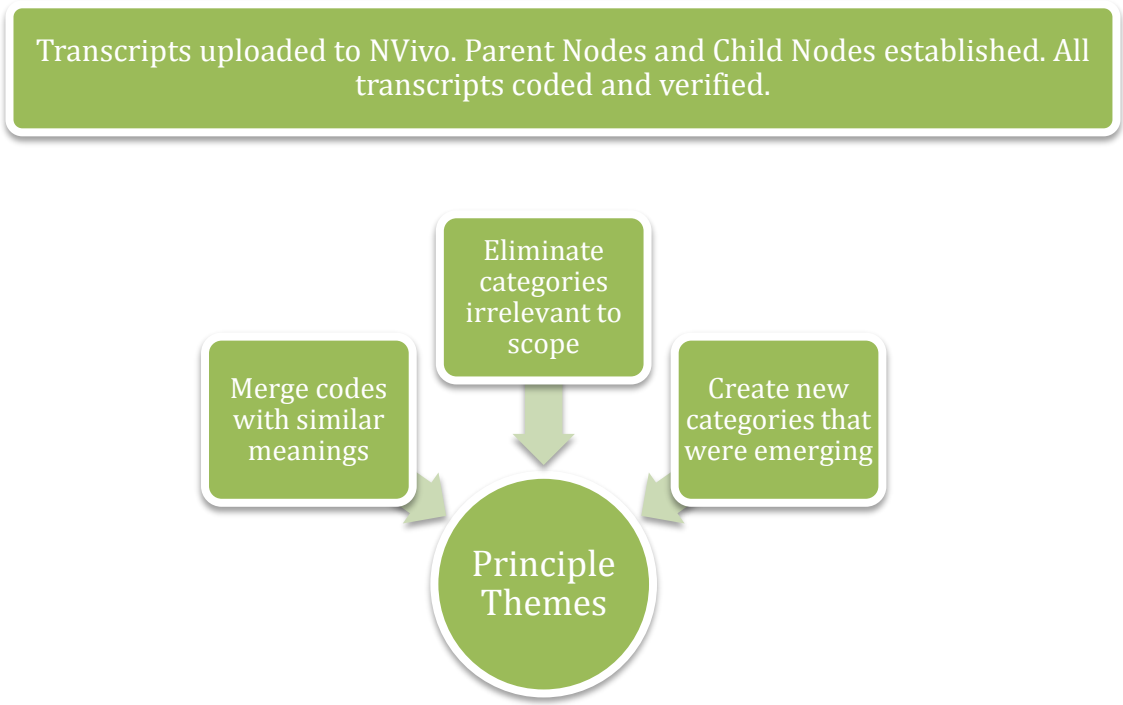


Figure 5.2 Data analysis framework

5.3 Coding Structure

This section includes a brief outline of the final themes that emerged in the coding structure and describes how they were derived. As part of this process each participant interview (i.e. data source) was carefully coded against the themes below and the results analysed. A summary of the source coding is available in appendix 8.

5.3.1 Personal factors

Exploring the range of the personal factors that determine choice of specialty was a key part of the research study, and the category "personal nodes" was therefore established as a parent node. During the interview process, it became apparent that there was a range of issues that fell under this category, and these were gradually formed into child nodes. The names of the various codes depict the language used by the participants, and are indicative of the range of issues that have some impact on the decision process. Only QSR NVIVO® codes were used for the purpose of this study. The interviews and memos were coded separately against these codes. Figure 5.3 represents the key nodes that were associated with "personal factors".

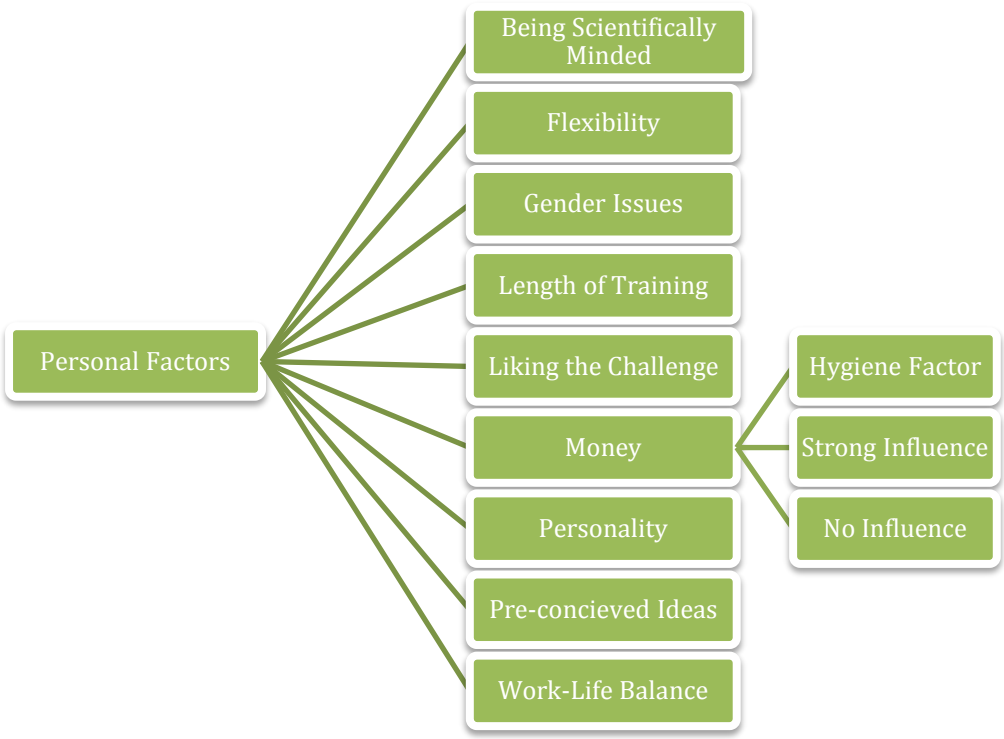


Figure 5.3 Personal factor codes that impact choice of specialty

A brief definition of the “personal factors” nodes, as identified in figure 5.3, are included below.

5.3.1.1 *Being scientifically minded*

This node captures comments and references made by participants in relation to their personal style of being scientifically minded and being driven towards a particular specialty due to this pre-disposition. This is subtly different to professional factors because the participants, in this context, are suggesting that they have a particular personal preference for the type of work they prefer, and this is influencing their specialty selection.

5.3.1.2 *Flexibility*

This node captures any comments related to flexibility offered by particular specialties and how this impacts on career choice. Issues such as ability to train part-time, taking time off during training, training in different locations and other similar attributes would be included under this node.

5.3.1.3 *Gender issues*

This node was used to highlight comments made by male versus female participants to look at any differences in how they perceived a variety of issues. In particular, it captures any explicit attribution of career choice towards a gender-related characteristic.

5.3.1.4 *Length of training*

This node captures specific comments where the participants indicated that the amount of time to train in a particular specialty to attain fellowship has had an impact on their choice of specialty. It should be noted that general practice training is typically a 3-4 year process for full time candidates, whereas, other specialties usually take longer, with some taking as long as 10 years.

5.3.1.5 *Liking the challenge*

This node captures specific comments made by participants where they indicated that they were intrigued by the challenging nature of a particular specialty (at a personal level), and hence, were influenced to consider it.

5.3.1.6 *Money*

This captures all comments with participants in relation to remuneration and ability to earn differential wages, in order to explore any related impacts on choice of specialty. Given that participants had different experiences in relation to money, this was further divided into child nodes to accurately capture the sentiments of the participants, as outlined below:

Hygiene factor

This child node captures comments from participants who indicated that they were aware of varying remuneration across specialties, but believed that even the lower remunerated specialties offered substantial earning capacity (as compared to non-medical careers). These individuals typically acknowledged that money was an important consideration in general, but they believed that any career in medicine would offer substantial remuneration opportunities. As such, these individuals did not find remuneration to be an influencer when choosing between specialties.

Strong Influence

This child node captures comments from participants who directly indicated that varying remuneration levels across specialties had direct impact on their choice of specialty.

No Influence

This child node captures comments from participants who directly indicated that varying remuneration levels across specialties had no impact on their choice of specialty.

5.3.1.7 *Personality*

This node captures comments made by participants in relation to particular personality types or traits being better suited to specific specialties and whether this acted as an influence on choice of specialty.

5.3.1.8 *Pre-Conceived ideas*

This node captures comments from participants where they had some pre-conceived ideas in relation to a particular specialty linked to past personal

experiences in relation to choice of specialty. This would include instances where participants had decided (prior to entering medical schools) that they had preference for or against a particular specialty.

5.3.1.9 *Work-life balance*

This was an important node (and different from flexibility) since it captures the notion of having a balance between work and personal requirements, and whether certain specialties were better suited to providing this balance. This node captures specific comments where participants noted that this was a factor when choosing their specialty.

5.3.2 Social factors

Social factors were largely associated with external influencers, rather than internal influencers. These codes included influences through lived experiences, participants' personal and professional environment, role models, impact of peers and family. Issues such as prestige and media support networks were also captured in this section. Figure 5.4 represents the key nodes that were associated with this category.

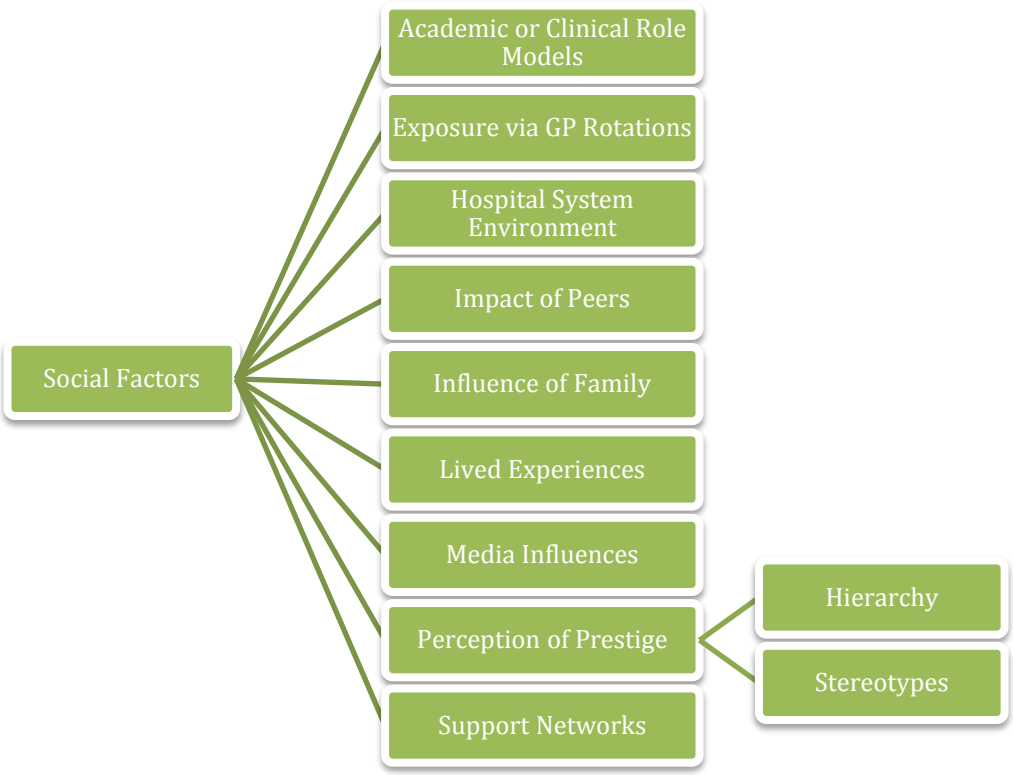


Figure 5.4 Social factor codes that impact choice of specialty

A brief description of the "social factors" nodes, as outlined in figure 5.4, is included below:

5.3.2.1 *Academic or clinical role models*

This node captures comments made by participants in relation to impact of any role models they had on choice of specialty, either during the course of their study or via direct exposure during their internship, apprenticeship or any other work they did with any clinician.

5.3.2.2 *Exposure via GP rotations*

This node captures comments from participants in relation to the impact of any GP work experience that they undertook as part of their university or prevocational training years. It captures any comments related to whether this had any impact on their choice of specialty.

5.3.2.3 *Hospital system environment*

This node captures the impact of the hospital system environment on individual career choices. It includes comments related to whether the hospital system work conditions, general conditions and any other related environmental factors had an impact on participants' choice of specialty.

5.3.2.4 *Impact of peers*

This node captures comments from participants in relation to any influence their peers had on their choice of specialty. It includes any discussions participants had in relation to what their peers' perceptions or experiences were in relation to various specialties, and whether this impacted on their own choice.

5.3.2.5 *Influence of family*

This node captures comments related to whether participants' were influenced in any way by their immediate family such as parents, siblings and partners when choosing their specialty. It included any comments related to parental pressure or preferences and whether this had an influence on participants' choice.

5.3.2.6 *Lived experiences*

This node captures any direct experiences that individuals had in relation to a particular specialty and whether this had an impact on choice of specialty. This was

not restricted to work-related experienced, but would also include any direct social experience that individuals had that had an impact on their choice of specialty.

5.3.2.7 *Media influences*

This node captures any influence that media (both fictional and non-fictional) has had on individuals' choice of specialty. This includes the impact of TV shows, movies, popular press, newspapers, books and real-life events and stories available through any range of media outlets.

5.3.2.8 *Perception of prestige*

This node captures any comments in relation to prestige attributed to individual specialties and specialists within medicine and its related impact on choice of specialty. This node is further divided into two separate child nodes:

Hierarchy

This includes references to perceived hierarchy amongst specialties where once is regarded more prestigious than others and related impacts on career choice.

Stereotypes

This relates to comments related to any stereotypes in relation to particular specialties and whether this had any influence on participant's choice of specialty.

5.3.2.9 *Support networks*

This node captures comments made by participants in relation to support networks available or attributable to particular specialties and whether this had any impact on individuals' choice of specialty. It includes references to existence of peers and/or professional support networks.

5.3.3 Professional factors

Professional factors were identified as those that were directly related to the clinical practice, and included things such as the type of medicine participants like to practise and interaction with patients. Issues such as autonomy, job satisfaction and ownership and control were also included since these were all important aspects raised by the participants during the interview process. Figure 5.5 represents the key nodes that were associated with this category.

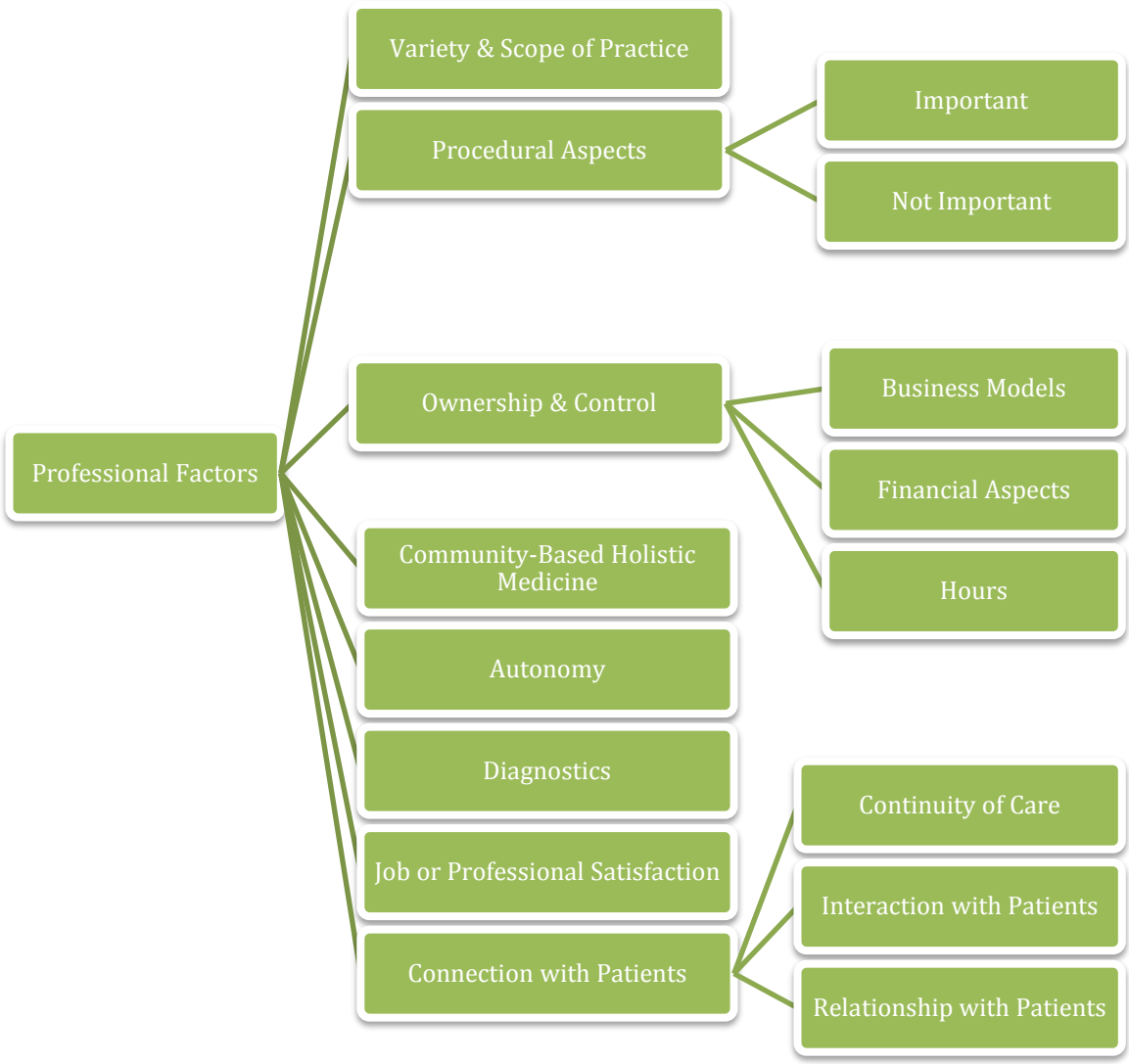


Figure 5.5 Professional factor codes that impact choice of specialty

A brief description of the "professional factors" nodes, as outlined in figure 5.5, is now offered.

5.3.3.1 *Variety & scope of practice*

This node captures comments made by participants in relation to the importance of variety and scope of clinical practice across specialties. It includes references to whether having access to different kinds of work influenced their decision to pick one specialty over any other.

5.3.3.2 *Procedural aspects*

This node captures comments from participants in relation to the varying ability to perform procedures across different specialties, and whether this influenced their

choice of specialty. This is node includes any reference to all types of surgical and non-surgical procedures and their related impacts on choice of specialty. The node is further divided into child nodes, which capture whether this was an important consideration or not in choosing their specialty.

5.3.3.3 *Ownership & control*

This node includes direct references to the ability to have ownership and control over the professional aspects of practising medicine across the various specialties. It acknowledges that this level of control varies across the specialties, and tests whether this had any impact on choice of specialty. It is further divided into the following child nodes:

Business models

This captures comments from individuals in relation to difference business models of how medicine is practised, the ability or inability to control these business models across different specialties, and its related importance.

Financial aspects

This captures comments related to financial aspects of how professional services are charged across different specialties, and its impact on choice of specialty.

Hours

This captures comments from participants in relation to the ability to determine their hours of work, both in terms of quantity of hours, as well as timing of the day when they worked.

5.3.3.4 *Community-based holistic medicine*

This node captures any references made by participants' preferences for or against wanting to practise community-based holistic medicine, and whether this influenced their choice of specialty.

5.3.3.5 *Autonomy*

This node acknowledges that different medical specialties offer different levels of professional autonomy. The node captures any reference to participants' preferences in relation to professional autonomy in how they practised medicine, as

opposed to working in an environment where they did not have such autonomy. This node also captures whether this had an impact on their choice of specialty.

5.3.3.6 *Diagnostics*

This node acknowledges that different medical specialties require varied levels of diagnostic skills. The node captures participants' references in relation to this, and whether working in specialties that required higher or lower levels of diagnostic skills had any impact on their choice of specialty.

5.3.3.7 *Job or professional satisfaction*

This node captures any comments related to professional or job-related satisfaction in relation to different specialties, and whether this had any impact on choice of specialty.

5.3.3.8 *Connection with patients*

This node captures comments made by participants in relation to varying types of engagement with patients across different specialties, and its impact on choice of specialty.

This node is divided into the following child nodes:

Continuity of Care

This node captures comments related to the ability to see the same patient over time and provide holistic care according to their evolving health needs.

Interaction with Patients

This node captures comments related to the type of interaction (or lack of) with patients that various specialties offer and whether participants noted it as an influencer.

Relationship with patients

This node captures comments from participants in reference to whether they were able to establish a professional relationship with a patient or not, and its related influence on their choice of specialty.

5.3.4 Life events

After the first eight interviews, it became apparent that sometimes the decision related to choice of specialty was not associated with the range of personal, professional or social factors, but was rather triggered by key events. This was a major finding, and led to the decision to establish this as a separate parent node and find the range of issues associated with this matter. The common issues were related to timing, practical opportunities and burnout. Issues such as access to information and ability to do a particular kind of training were also noted. Figure 5.6 represents the key nodes that were associated with this category.

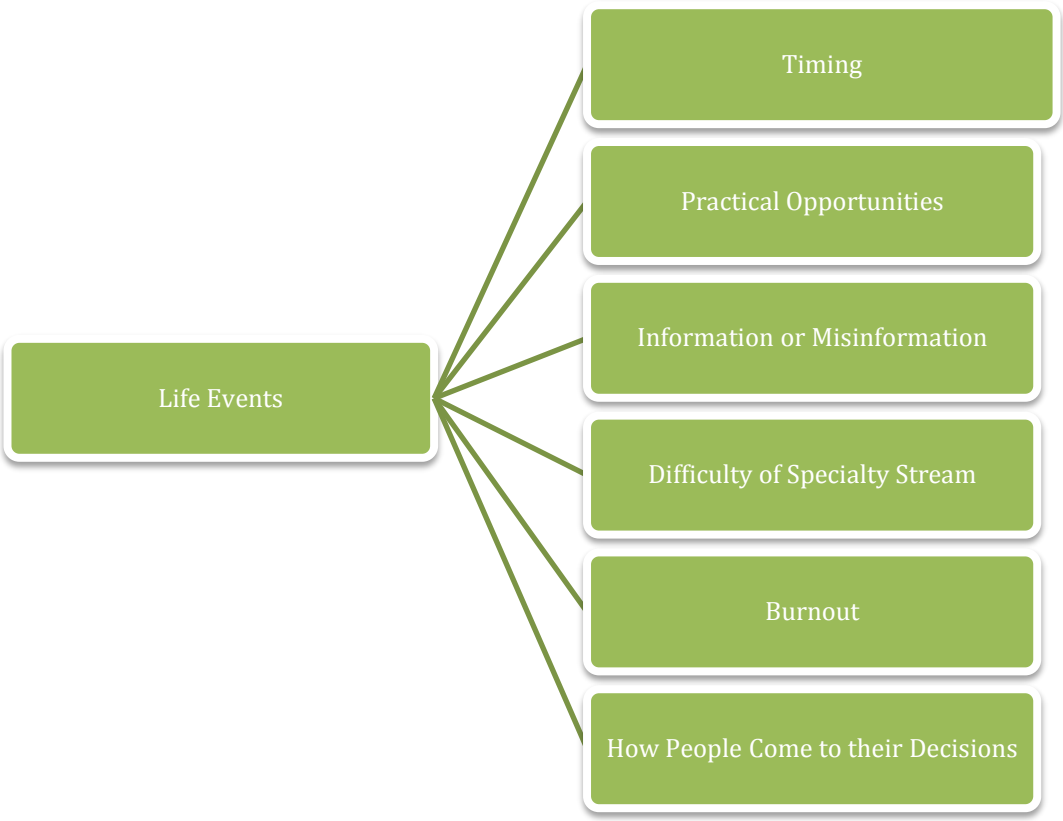


Figure 5.6 Life event codes that impact choice of specialty

A brief description of the “life events” nodes, as outlined in figure 5.6, is provided below:

5.3.4.1 *Timing*

This node captures comments made by participants in relation to the impact of a particular time in their life that had an influence on their decision to choose a particular specialty. This included the impact of age-related or biological considerations such as starting a family.

5.3.4.2 *Practical opportunities*

This node captures comments from participants in relation the availability (whether by choice or chance) of practical opportunities to pursue a particular career pathway that came up, and how it impacted on their specialty choice. It included references to opportunities to undertake a scholarship placement, or other work experience that came up.

5.3.4.3 *Information or misinformation*

This node captures comments made from participants in relation to whether access to career-related information influenced their choice of specialty. It also includes comments related to wrong information or difficult-to-find information, which may have influenced their choice.

5.3.4.4 *Difficulty of specialty stream*

This node captures any comments made by participants in relation to their perception of difficulty around any particular specialty, and whether this impacted on their career choice.

5.3.4.5 *Burnout*

This node captures any comments made by participants in relation to their perception of burnout around any particular specialty, and whether this impacted on their career choice. It also includes any actual experiences of burnout that they experienced that influenced them to pick a specialty, or switch across specialties.

5.3.4.6 *How people come to their decisions*

This node captures any comments made by the participants in relation to how they came to their decision within the context of being influenced to make the decision because of particular life events.

5.4 Chapter Summary

This chapter has provided an overview of the coding structure and how this was derived. The data coding process was described in detail and the analysis framework that underpinned the study was presented. A diagrammatic representation of the final coding structure was also included. This chapter also provided a detailed description of the coding structure to illustrate the context of what was being captured under each parent and child node to assist the reader in understanding what each node represents. The findings outlined in the next chapter are based on this structure. This chapter is particularly important for the reader to gain a better understanding of the analysis and findings that follow in subsequent chapters.

6 Findings

6.1 Chapter Overview

This chapter provides a detailed description of the findings of this research. Multiple queries were conducted as part of this research study and these are explained in detail in this chapter. Section 6.2.1 details the findings related to personal factors, section 6.2.2 summarises social factors, and section 6.2.3 covers professional factors. In exploring the various personal, social and professional factors during this research, some additional factors that were driven by key events or practical opportunities were found, and these are covered separately under section 6.2.4 titled Life Events. Lastly, section 6.2.5 provides a summary of the key decision-influencing factors across all the participants. In detailing the findings in these sections, the results of the various queries have been listed in tabular format and direct quotes from participants have been included to illustrate the issues related to each query. After progressing through each query, a summary of the essence of the information obtained from each query is presented as “findings”. The chapter ends with a summary of all of the findings obtained from analysing the data.

6.2 Findings

The QSR NVIVO® software, which was used to code the interviews as outlined in the previous chapter, was used to analyse the data. The resulting coding structure provided a detailed overview of the key issues related to this research. A number of “queries” were run across the coded QSR NVIVO® data to determine relationships between the key participant attributes (refer participant selection Matrix table 4.1). The use of queries to show relationships within the coded data is a common technique used in research studies, and the QSR NVIVO® software, in particular, is designed to facilitate this process. The process of running queries essentially involved the selection of key attributes to determine if there were any relationships across the coded data from the various interviews. This provided a broad picture of the key themes emerging from the data. In the first instance, some global queries were run to look at the broad range of factors that impacted on the decision process

and to determine which of these were being mentioned more frequently than others. Next, a number of queries were run against the individual participant attributes to determine if there was any new information. Finally, a summary of the most important factors that informed the decision process was created. A detailed description of the findings, including key quotes from the participants to illustrate the essence of the findings, is included below.

6.2.1 Personal factors

In exploring the range of personal factors that were identified, it became very clear that whilst a number of different factors were mentioned during the interview process, there were a few key ones that garnered most of the attention and focus across the cohorts. These are discussed in some detail below.

6.2.1.1 *Personal factors by gender*

> *I've yet to be on a campus where most women weren't worrying about some aspect of combining marriage, children, and a career. I've yet to find one where many men were worrying about the same thing.*
>
> Gloria Steinem

Table 6.1 outlines the total number of comments made by the male and female participants that were identified and coded against the personal factor node in the research. In reading this table, it becomes apparent that within the broad category of personal factors that impacted choice of specialty, there were some key variables, as highlighted in the table, that were more important than others. In comparing the male and female participant responses in relation to personal factors, it became clear that the dominant factors in this analysis were work-life balance (65 references by males and 87 references by females), personality (26 references by males and 39 references by females), length of training (23 references by males and 39 references by females) and flexibility (32 references by males and 57 references by females). Whilst important across both genders, personal factors had a greater resonance with the female participants. Female participants were found to give greater importance to factors such as flexibility, personality, length of training and work-life balance. Male participants were more inclined to consider

money as a hygiene factor, with females more likely to indicate that it had no influence at all. Overall, the participants did not refer to money as a motivator at all, however, the minority who did, tended to be male.

Table 6.1 Personal factors by gender

Personal Factors		Male	Female
Being scientifically minded		3	4
Flexibility		32	57
Gender issues		1	4
Length of training		23	39
Liking the challenge		5	7
Money	Money	33	58
	Hygiene factor	15	12
	No influence	9	18
	Strong influence	5	1
Personality		26	39
Work-Life balance		65	87
Total coded references to above factors		**217**	**307**

Flexibility & Work-Life Balance

There were notable differences in the responses of male and female participants towards flexibility, indicating that this node tended to be more largely recognised as an influencing factor among women than men. However, the male counterparts still referred to this more frequently than any other issue. The following quotes, one from a male and the other from a female participant, illustrate how flexibility and work-life balance became important factors due to personal needs such as family commitments.

> *"I think [the importance of flexibility] depended on at what stage of training I was up to. So, initially, when I was in internship . . . I was married but we had no children, so, in my own personal circumstances, I was pretty much free to do whatever I wanted. . . . So, it didn't have that much of an influence on what I chose, but then, as soon as I had a kid, well, it changed a lot more, and so, flexibility and training became a massive factor in deciding."*
>
> *(Flexibility: GP EV, Male, Mid-Thirties, General Practitioner)*

> *"Lifestyle for me is a big one. I do not have children yet, but I would like to have children. I know GP is very feasible. You can work five days a week. You can work just school hours and it is very flexible, and you can do all of your training time part-time if you want to, and that is very important to me."*
>
> *(Work-Life Balance: PGY1 AC, Female, Late-Twenties, Prevocational Doctor)*

There were some participants who noted that, at the time of making their decision, they did not give flexibility a high priority due to their personal circumstances; however, they outlined that in hindsight, this should have been a key factor. The quote below from a female participant illustrates the point that the importance of flexibility was something that became clearer to her after she had already picked her career.

> *"I think I count my blessings now that I happened to have fallen into a career choice that offers that flexibility, but I don't remember it being a significant part of the decision-making."*
>
> *(Flexibility: GP MF, Female, Late-Thirties, General Practitioner)*

Length of Training

Length of training was a key issue in relation to some individuals; however, it was noticeably more important for female participants, while many younger male participants were not concerned about the length of training across the specialties. The quotes below outline how length of training was important for a female participant due to wanting a family, while it was not a high priority for the male participant.

> *"So, particularly someday, while I was focusing more between general practice and doing, like, physician training, and the duration of time for physician training put me off because I wanted to go do humanitarian work. So, that was again another thing I wanted to do in the next few years, but rather than doing a long training and because I want a family."*
>
> *(Length of Training: GPR3 AK, Female, Early-Thirties, GP Registrar)*

"Yeah, I think that's the attraction of the field, regardless of how long it is going to take to get there. That's the motivation, rather than—oh, that's another year? No I won't do it. I can see myself being happier in being in the role that is more fulfilling long-term, than say, saving a year on my training time. That's not really a motivating factor."

(Length of Training: MS2 LM, Male, Early-Twenties, Medical Student)

Money

This node received a high degree of mention in the queries since it was a specific question in the interview process. However, the vast majority of the respondents, both male and female, indicated that it was a hygiene factor, and, in fact, had no impact on the decision process. In the entire cohort interviewed, only one respondent rated it as a important factor, which suggests that in fact, money is not really an influencer.

The quotes below illustrate that money was simply not a consideration when making final decisions. Most participants acknowledged that they already knew they would be earning above average income by working in the field of medicine, and the differences in income within specialties did not matter.

"I'm not going to work, I'm not going to choose a career over another because it simply pays more. I'm only going to choose because I want to do it, regardless of what it pays."

(Money—No Influence: MS2 LM, Male, Early-Twenties, Medical Student)

"No, I think I just was happy that a doctor was probably going to be on a good wage. Having now been – being a doctor, and now being a GP registrar, it doesn't influence me, because I'm already in this specialty."

(Money—Hygiene Factor: GPR3 AK, Female, Early-Thirties, GP Registrar)

"Not between the specialties, I mean, I was pretty comfortable as a doctor in any sort of field. . . . There is always got to be people that are sick, and you don't need to worry about that sort of stuff. So, as far as choosing a specialty, not really. I think you can always be comfortable with the medicine with any specialty."

(Money—No Influence: GPR1 GC, Male, Late-Twenties, GP Registrar)

Personality

Whilst it has been noted that this study is not aimed at identifying personality types (refer Literature Review, section 2.2), it is important to acknowledge that there were certain personality aspects that had an impact on the choice of specialty.

The quotes below illustrate that individuals who liked social interaction with peers and engagement in a particular style of work environment due to personal preferences were more likely to pick particular specialties since they were better suited to their particular personality traits. Certain aspects such as wanting to connect with patients, being in high-pressure environments, enjoying variety of work, etc., acted as subtle influencers on what individuals picked as a specialty.

> *"I love the camaraderie. I love the fact that you have a lot of peer interaction and not just peers but like, I mean, the registrars, the interns, consultants, nurses and physios—I like that whole environment. I am a very social person, so I love being with others even in the professional sense."*
>
> *(Personality: GPR3 JM, Female, Mid Thirties, GP Registrar)*

> *"I mean, that's another personality trait where I kind of need to have some level of control over it. I don't like being at the mercy of it, because I need to be able to have a say."*
>
> *(Personality: GP EV, Male, Mid-Thirties, General Practitioner)*

> *"Okay, personality is a big thing. So, emergency was because of the range of what you see, like the fast pace, and I love the—you got to get in there and do it, like, there is no sitting around. I mean, I like psych, but I couldn't be a psychiatrist. It's too long, I just couldn't bear that. Paediatrics - I love kids, and again, it's a really—even though it's one population, you get every disease, so it's a broad range, and general practice for the same reason. I love the range."*
>
> *(Personality: GPR2 KH, Female, Early-Thirties, GP Registrar)*

> *"I mean, I've got a personality. I knew that I'd be doing something that involved dealing with people on a day-to-day basis. So, I've always thought that general practice is one of the areas I'd look at, or physician, or something like that."*
>
> *(Personality: MS2 DT, Male, Late-Twenties, Medical Student)*

Finding 1: Both male and female participants valued flexibility and work-life balance as the most important factors, with female participants giving this a higher priority.

Finding 2: Length of training was a more important consideration for females as compared to males in general, but the effects were less noticeable for younger people.

Finding 3: Money was not a decision influencer with either male or female participants. However, males were more likely to refer to it as a hygiene factor, and females were more likely to indicate that it did not have any influence at all.

Finding 4: Personality has some impact on the decision process, regardless of gender.

6.2.1.2 *Personal factors by age*

In youth we learn; in age we understand.

Marie von Ebner-Eschenbach

Table 6.2 outlines the total number of comments made by the participants as broken up into key age groups. This particular table is important since it demonstrates how the range of personal factors relates to the participants' ages, and demonstrates similarities and dissimilarities in their attitude towards the key variables. The variables highlighted in yellow were the more dominant issues as noted by all the participants. Money has been highlighted separately to demonstrate the fact that this variable was linked to a specific part of the interview and was discussed with each participant. As such, the number of comments relates to the interview process itself, rather than to a participant-driven discussion. The findings are discussed in some detail below.

Table 6.2 Personal factors by key age groups

Personal Factors		17–24	25–30	31–35	36–40	41–50
Being scientifically minded		0	3	2	2	0
Flexibility		15	27	26	17	4
Gender issues		0	5	0	0	0
Length of training		8	26	12	13	3
Liking the challenge		4	2	1	2	3
Money	Money	8	31	17	13	3
	Hygiene factor	2	13	5	7	0
	No influence	6	7	8	4	2
	Strong influence	0	6	0	0	0
Personality		6	31	21	6	1
Work-Life balance		17	69	33	24	9
Total coded references to above factors		**66**	**220**	**125**	**88**	**25**

Participants who were aged between 25 and 30 account for the greatest majority of quotations in relation to personal factors (220 coded references), with work-life balance (69 coded references), flexibility (27 coded references) and personality (31 coded references) topping the list of key attributes that impact the decision process. This infers that this was, in part, perpetuated by the fact that a large portion of this group were in relationships, or were in the process of establishing relationships with a view to starting a family. It is interesting to note that the time it takes to finish medical school and enter the workforce coincides with the time when a number of personal decisions related to finding a partner and/or getting married and starting a family are usually being made, especially for postgraduate entrants into medical school.

The quotes below illustrate how both male and female participants in the 25–30 age group expressed the importance of work-life balance and flexibility in relation to family commitments.

> *"And that's how we ended up on GP training. When we just sat down where we were like, look, if we're to start to do physician training, it's going to happen to us*

every year [night shifts and hospital rosters] for the next six years. That was too much. We were late 20s and early 30s, when we were really young and want to be able to enjoy ourselves, as well as enjoy each other's company."

(Work-Life Balance: GPR2 DC, Male, 25–30 Age Group, GP Registrar)

"I suppose some of these, to go back to personal factors, certainly it's lifestyle. The ability to be able to go home at night. Eventually, I'd like to get married; I'd like to have a family. I like to be a supportive partner and that's certainly something that impacts a lot when it comes to looking at specialties."

(Work-Life Balance: PGY1 JR, Male, 25–30 Age Group, Prevocational Doctor)

"When I was a medical student, I thought I was going to be working really hard in the country. I thought the guys in the country work harder than the guys who are in the city, on call for 24 hours and get up and go to work the next day. I thought I was going to be doing that, but I'm not sure about that anymore. I don't think I've got the capacity for that."

(Flexibility: GPR3 CM, Female, 25–30 Age Group, GP Registrar)

It was interesting to note that the issue of length of training was particularly important for participants in the age brackets 31–35 and 36–40, suggesting that there is a greater interest in finishing training and starting unrestricted medical practice as one grows older. This was reflected in the interviews, and medical students were generally less concerned about how long they needed to train and were more motivated by other factors. However, as they progress in the training continuum, many doctors start to feel that they do not want to train for an extended period of time and are considering the time taken to complete training. This can be substantially different across the various specialties, with GP being a shorter training program. The quote below from one of the older medical students illustrates this issue.

"I definitely think I agree with the shorter path. As people who are my age or a bit older, they do drift towards areas that have a shorter training program, for example, not surgery, because surgery is very lengthy."

(Length of Training: MS2 KM, Female, 36–40 Age Group, Medical Student)

With reference to money as a motivator, the vast majority of the participants (regardless of age) referred to it as either a hygiene factor, or as having no influence at all, with only one individual indicating that it had some influence on decision-making.

Personality was also found to be an influencer regardless of age, and participants commented on how certain specialties were better suited to particular personality traits. The quote below outlines how individuals related certain personality-driven styles and preferences, such as listening and people engagement skills, as being linked to a particular specialty type. This also illustrates a high degree of self-awareness, which was a pattern across most participants.

> *"There's probably certain personality types that are good for particular things. . . . I've realised that I'm not so good in any one particular area, but I can sort of cover a good basis of many different areas [in medicine]. . . . I'm not particularly good at one particular thing apart from just listening. Sort of, I have a bit of people skills—that's what I'm good at, so I'm in general practice."*
>
> *(Personality: GPR2 FS, Male, 31–35 Age Group, GP Registrar)*

Finding 5: All participants valued flexibility and work-life balance as the most important factors, with participants aged 25–35 giving it the most importance.

Finding 6: Length of training was a more important consideration for participants aged 31–40, followed by participants aged 17–30, with participants over 40 not giving it too much importance.

Finding 7: Money was not a decision influencer regardless of age, although participants aged 31–40 were more likely to have given it more thought.

Finding 8: Personality had some impact on the decision process regardless of age.

6.2.1.3 *Personal factors by career stage*

You can't tell what's going to fulfil you in different stages in your life.

Andrea Riseborough

Table 6.3 outlines the comments made by the participants based on their stage of career. This particular table is important since it demonstrates how the range of personal factors relates to where the participants are in their career stage, which creates policy implications for the future. The variables highlighted in yellow were the more dominant issues noted by all the participants. Money has been highlighted separately to demonstrate the fact that this variable was linked to a specific part of the interview and was discussed with each participant. As such, the number of comments relate to the interview process itself rather than a participant-driven discussion. This table showcases the importance of key factors such as work-life balance, flexibility, length of training and personality regardless of where the participants are in their career.

Table 6.3 Personal factors by career stage

Personal Factors		Medical Students	Prevocational Doctors	GP Registrars	Practising GPs
Being scientifically minded		2	2	0	3
Flexibility		21	22	22	24
Gender issues		1	4	0	0
Length of training		20	15	16	11
Liking the challenge		6	2	1	3
Money	Money	19	24	17	12
	Hygiene factor	13	6	5	3
	No influence	7	7	7	6
	Strong influence	0	6	0	0
Personality		14	27	15	9
Work-Life balance		26	49	40	37
Total coded references to above factors		**129**	**164**	**123**	**108**

Medical Students

Medical students noted key factors such as work-life balance (26 coded references), length of training (20 coded references), flexibility (21 coded references) and personality (14 coded references) as most important in influencing their choice of specialty. Money was not seen as a factor that influenced choice across any of the cohorts. The following quotes from medical students highlight the importance of work-life balance and flexibility, with one also linking it to gender issues.

> *"Well, I've been to a surgical interest group information session, and the lady, who as a female had gotten in to it, she was telling us her story and how much you have to put aside to be able to do surgery, and I was like, I'm not sure if that's the sort of lifestyle I want. It's definitely something that students talk about."*
>
> *(Work-Life Balance: MS1 MH, Female, Mid-Twenties, Medical Student)*

> *"Females I've spoken to really look towards . . . because some have children, they are looking towards GP flexibility, and for some of the males flexibility isn't so high up on their priority because they are the bread winner anyways, so they are gonna be paid. Does that make sense? You know, females who are older seem to put flexibility and family a bit higher up in their list of priorities."*
>
> *(Flexibility: MS2 KM, Female, Late-Thirties, Medical Student)*

The following quote demonstrates that young medical students were less concerned about length of training and that this was not a consideration for them when choosing a particular specialty.

> *"I started uni when I was so young—I was 17 when I started in a five-year course. So, I knew that realistically, I didn't really care how long it took because I'd still be quite young and able to do [what I wanted]."*
>
> (Length of Training: PGY1 BS, Female, Early Twenties, Medical Student)

Most medical students acknowledged that they were aware that there were differences in remuneration across specialties but believed that they would still earn a reasonable income no matter what they chose. This quote typifies the medical

students' response to remuneration and shows that it was not linked to their choice of specialty.

> *"But I am aware that there are different things [salary]. Having said that, I am sure all the positions I picked earn enough for what I am after, so it's not an issue."*
>
> *(Money—Hygiene Factor: MS1 AK, Male, Mid-Thirties, Medical Student)*

Prevocational Doctors

Prevocational doctors quoted personal factors as being part of the decision process more than any other group, which demonstrates that the hospital environment created a greater focus on the importance of key personal factors amongst the participants. This cohort identified work-life balance as the single most relevant of the personal factors (49 coded references), and, to a lesser extent, flexibility (22 coded references). This suggests that this is likely due to the hospital system environment, which places demands due to hours of work and rosters. The following quotes outline the importance of work-life balance and flexibility amongst prevocational doctors.

> *"Lifestyle for me is a big one. I do not have children yet, but I would like to have children. I know GP is very feasible. You can work five days a week, you can work just school hours and it is very flexible, and you can do all of your training time part-time if you want to, and that is very important to me."*
>
> *(Work-Life Balance: PGY1 AC, Female, Late-Twenties, Prevocational Doctor)*

> *"In the sense that I want to be able to go to work, have it all run easily and efficiently, have a positive impact on people, but still have the opportunity to do other things—and I mean by that other professional things, like utilising sort of my legal background by maybe getting involved in committees and organisations and boards and things like that."*
>
> *(Flexibility: PGY1 CM, Male, Late-Twenties, Prevocational Doctor)*

Prevocational doctors also noted the impact of personality on influencing choice of specialty. The quote below demonstrates how certain characteristics are associated with particular specialties.

> *"I guess GP is a bit of a warm-fuzzy kind of practitioner, whereas maybe surgeons are a bit more hard-ass and a bit more hard and cold, so, I guess that was, I mean, that's just the stereotype."*
>
> *(Personality: PGY1 AC, Female, Late-Twenties, Prevocational Doctor)*

Again, prevocational doctors did not rate remuneration highly, and the quote below presents a typical response, with its indication that being a doctor, no matter the specialty, would offer adequate remuneration and differences between specialties did not have any impact.

> *"No, I'm really bad about money, but it's not a consideration at all. I see if you love what you do and you're good at it, then the money side sort of takes care of itself. We don't have extravagant tastes, we have a nice lifestyle on a good average income, and so we didn't have aspirations of being zillionaires or any thinking like that."*
>
> *(Money: PGY2 TW, Male, Early-Twenties, Prevocational Doctor)*

GP Registrars

GP registrars had the largest consideration for work-life balance (40 coded references), followed by flexibility (22 coded references), both of which are closely linked. Length of training was the next important consideration (16 coded references), and remained an important consideration for some. This is a key issue for registrars since they usually have young families during this time of their training, and this often competes with training and work pressures. The following quotes exemplify the importance of flexibility and length of training for GP registrars.

> *"After medical school, in inter year and resident year, I definitely looked very closely at how long something would take and how flexible they were. And I realised that the GP training was flexible and the physician's training is reasonably flexible, but it's just too long for me, I thought. That's why I never applied for it."*
>
> *(Length of Training and Flexibility: GPR2 FS, Mid-Thirties, GP Registrar)*

"For me, it is the flexibility. Having two kids, that is really nice, not being in the hospital system, and because you set your hours. So yes, it would be the flexibility for me."

(Flexibility: GPR2 KH, Female, Early-Thirties, GP Registrar)

Similar to other cohorts, GP registrars also did not give any consideration to remuneration as being a driver in choosing their specialty, as outlined in the quote below.

The money was never part of the mix. We weren't particularly wealthy growing up. So, I always thought if you're a doctor you're going to always earn better than average. I didn't actually really think about being worried because you earned so much more than everyone else. So, that never really came into it.

(Money: GPR3 AV, Male, Early-Thirties, GP Registrar)

Practising GPs

Practising GPs also reported work-life balance as their most important personal driver (37 coded references, with not many differences from other cohorts regarding flexibility (24 coded references). Length of training (11 coded references) was less important than it was for other cohorts, arguably because they had already completed training and, therefore, this was no longer an issue.

The quotes below highlight the importance of work-life balance and flexibility for this cohort.

"Having kids, the lifestyle, future career planning—general practice fitted all of that. I couldn't see myself being a specialist in the hospital."

(Work-Life Balance: GP SM, Female, Mid-Thirties, Practising GP)

"I really enjoyed that and seriously considered surgical training for the first time when I was actually in medical school, and the thing that really put me off was the length of the training program and then lack of flexibility with some training programs as well."

(Flexibility: GP AT, Female, Early-Thirties, Practising GP)

As with the other cohorts, money was not an influencer for practising GPs. However, it was interesting that some noted that if remuneration in general practice were to be further reduced, then it could impact on their continuing to practice into the future, as illustrated by the quote below.

> *"[In reference to potential future reduction in GP remuneration], I figured out my income would probably go down by 25% to 35%, which is a huge amount, and I actually figured out I probably wouldn't do it anymore, wouldn't do general practice anymore, which really shocked me because I like to think of myself as somebody who is pretty committed and loyal to my profession and to my patients."*
>
> *(Money: GP CB, Female, Late-Forties, Practising GP)*

Finding 9: All cohorts, regardless of career stage, valued flexibility and work-life balance as the most important factor in relation to picking general practice.

Finding 10: The emerging workforce (medical students and prevocational doctors) was very aware of personal preferences in relation to work, and would strive to find a balance more than others.

Finding 11: Money was not a decision influencer regardless of career stage. However, any reduction in future remuneration has the potential to impact on workforce retention amongst older GPs.

6.2.1.4 *Personal factors by area grew up in*

> *I wanted to be a doctor at one point and I also wanted to be a pilot. I think if you grow up in a dodgy area, reality often beats down those ambitions as you get older. But with me that never really happened.*
>
> James McAvoy

Table 6.4 outlines the importance of key personal factors in relation to where the participants grew up. The table shows that those based in urban locations had the highest degree of interest in key issues such as work-life balance, flexibility and length of training. Overall, the more frequent mention of personal factors by this

group showed a tendency for urban-raised doctors to value a medical career more aligned with their personal-life demands. It should be noted that the higher focus on these factors by people from an urban background takes into account a correction for the higher number of urban participant respondents. The process of correcting for the higher number of participants essentially involved looking at the percentages of respondents within each cohort that valued the personal factors. This ensured that the results were not biased based on the number of participants from urban, regional or rural settings that participated in this research.

Table 6.4 Personal factors by area grew up in

Personal Factors		Urban or Outer Metro Area	Regional	Rural or Remote
Being scientifically minded		4	2	1
Flexibility		63	9	17
Gender issues		5	0	0
Length of training		42	7	13
Liking the challenge		10	0	2
Money	Money	51	7	14
	Hygiene factor	15	5	7
	No influence	21	2	4
	Strong influence	6	0	0
Personality		51	7	7
Work-Life balance		109	15	28
Total coded references as per above factors		**377**	**54**	**93**

After allowing for selection bias, given the number of rural, regional and urban participants, it was noted that urban participants were still most likely to refer to issues such as flexibility (63 coded references), length of training (42 coded references), work-life balance (109 coded references) and personality (51 coded references) as contributing factors. Both rural and regional participants did regard these as important issues, but this was not seen as a high priority when compared to their urban counterparts.

The following quotes from urban-based participants underline the importance of work-life balance and flexibility for this group.

> *"I've seen how doctors in training, myself included, get with it and get overworked in the hospital system. And that's something I cannot put myself through—or I will not put myself through any more."*
>
> *(Work-Life Balance: PGY1 TW, Male, Urban, Prevocational Doctor)*

> *"The work-life balance—I just want to be able to do my art work and have some separate life to medicine, so that I have the capacity to do other interests would be good. I don't really find myself wanting to be at the top of my career in terms of the most world-renowned neurosurgeon or anything. I don't have that driving ability to be the best. I just want to do it well."*
>
> *(Work Life Balance: MS4 LS, Female, Urban, Medical Student)*

> *"One of the other reasons that I thought general practice is so fantastic is that, well, if I do want to come back and live with my family, we're using the country general practice. It is the best thing for it within medicine because, I mean, most of the time, if there is a specialist in town, they're just a visiting specialist, and they are maybe one day a fortnight or one day week or like that."*
>
> *(Flexibility: GPR2 MW, Female, Rural, GP Registrar)*

Money was not a key factor across the group regardless of origin; however, urban participants were more aware of the salary differences across specialties, and had given the issue greater consideration. The only participant who rated this as a decision influencer came from an urban background. The quotes below illustrate that neither rural nor urban participants viewed money as a factor that influenced their choice of specialty. However, the urban counterparts had given it more consideration and compared it to other specialties, whereas those from a rural background were more likely to discard it as an issue without giving it much consideration.

> *"My opinion still is that doctors get paid very well. GPs don't earn what ENT surgeons earn but I think we do okay. We have a comfortable lifestyle, so, I did think*

about that. I weighed that up as well then. All of those factors. I still thought that would be a good career and choice for me."

(Money: GPR3 AV, Male, Urban, GP Registrar)

"Yeah, I'm not going to work, I'm not going to choose a career over another because it simply pays more. I'm only going to choose because I want to do it regardless of what it pays."

(Money: MS2 LM, Male, Rural, Medical Student)

Finding 12: Doctors from an urban background gave greater importance to issues related to flexibility and work-life balance when choosing their specialty.

Finding 13: Money was not an influencer in choice of specialty regardless of rural, regional or urban origin.

Finding 14: Personality had a similar impact on choice of specialty regardless of rural, regional or urban origin.

6.2.1.5 *Personal factors by graduate status of university program*

Flexibility has become a modern-day value that everyone wants. But flexibility comes with a cost.

Maynard Webb

Table 6.5 presents the importance of key personal factors to the participants according to whether they were currently undergraduates or postgraduates. The factors highlighted in yellow were the most important for both groups. Money is highlighted separately, as it was linked to a specific part of the interview and was discussed with each participant. As such, the number of comments relates to the interview process itself, rather than a participant-driven discussion. This table demonstrates the importance of key factors such as work-life balance, flexibility, length of training and personality regardless of where the participants were in their university program.

Table 6.5 Personal factors by graduate status of university program

Personal Factors		Undergraduate	Postgraduate
Being scientifically minded		2	5
Flexibility		49	40
Gender issues		1	4
Length of training		23	39
Liking the challenge		8	4
Money	Money	28	44
	Hygiene factor	10	17
	No influence	12	15
	Strong influence	0	6
Personality		26	39
Work-Life balance		71	81
Total coded references to above factors		**230**	**294**

Overall, personal factors were equally important for both undergraduate and postgraduate groups. Both groups mentioned the same four factors most frequently: work-life balance, flexibility, length of training and personality. However, it was clear that postgraduate entrants had a higher emphasis on work-life balance (81 coded references, compared with 71 coded references from undergraduates). This group was a bit older in general, and usually had competing family commitments. This is important to note as it validates the idea that postgraduate students, as they are more mature, tend to weigh a diverse range of factors, including personal factors, before choosing a specialty pathway. This is expressed in work-life balance scores, where graduate participants gave this a greater degree of importance.

The following quote illustrates how the work-life balance played a role in influencing the decision-making of one of the postgraduate participants.

> *"So, I think that was something that I saw as a student, as well was seeing with some of the doctors who were in the hospital at these crazy hours. They complain—some of them—about the lack of good work-life balance, and I felt that work was sort of their lives, and that for me was a consideration. Then I felt, well, I don't want*

to be like that. I would like to be someone who enjoys what I do, but also can go and enjoy other aspects of my life as well."

(Work-Life Balance: GP AT, Female, Postgraduate, General Practitioner)

Interestingly, having greater flexibility was cited more frequently by undergraduate entrants (49 coded references), which reflects the greater need of the younger cohort coming through the medical schools, who demand this as a way of life, as highlighted by the following quote:

"I always thought about it. I want to be a mom and a wife, and I want to be able to have a flexible career, and I want to be able to work part-time when it suits me in my personal life. That definitely is important to me and definitely affects my decision for general practice."

(Flexibility: GPR3 AK, Female, Undergraduate, GP Registrar)

Length of training was a key point of difference (23 coded references by undergraduates, compared with 39 by postgraduates), with postgraduate entrants preferring a shorter time frame to full vocational registration as medical practitioners. This is understandable since these individuals were older and had spent more time in university before graduating from medical school. The following quote from a participant in the postgraduate program emphasises this point.

"Length of training is certainly a factor . . . that I must have spent an extra two years for other specialties. That's definitely a factor."

(Length of Training: GPR1 AC, Female, Postgraduate, GP Registrar)

Money, whilst part of the consideration for older postgraduate entrants, was still not the main driver in the decision process. The first quote indicates that money did enter into the thinking of a postgraduate participant, while the second quote demonstrates an undergraduate's more casual attitude toward money as an influencing factor.

"I actually had a bit of an idea of what sort of money makes you comfortable. So, yeah, I think, to be honest about it, money probably was a part of the decision, along with probably the overwhelming desire to have a fulfilling career and help people."

(Money: PGY1 CM, Male, Postgraduate, Prevocational doctor)

"And I just figured, well, as a GP, I can have a very, very comfortable living. I don't need to be a multimillionaire. And I've realised that most medical people are not interested, anyway, so, I'm just very early on in this course. You sort of tell, well, if you want to be really well-off financially, medicine isn't the right career for you."

(Money: GPR2 MW, Female, Undergraduate, GP Registrar)

Finding 15: Postgraduate entrants into medical school gave greater importance to issues related to work-life balance, flexibility and length of training when choosing their specialty as compared to undergraduate entrants.

Finding 16: Postgraduate entrants into medicine gave issues related to remuneration greater consideration whilst choosing their specialty. However, this was still not a key driver in making their decision.

6.2.1.6 *Personal factors/ childhood exposure to non-GP medicine and GP*

Childhood didn't have a big influence on me, really—in fact I spent most of it plotting how to escape.

Simon Callow

Table 6.6 presents the responses of the participants regarding personal factors in relation to the degree with which they were exposed to medicine while growing up. This exposure to medicine was further divided into two types: non-GP medicine and GP medicine. Reflecting a similarity to other groupings, work-life balance was mentioned most frequently by all participants regardless of the degree of exposure to medicine while growing up. Flexibility, length of training and personality were the other important factors across the board.

Table 6.6 Personal factors: Childhood exposure to non-GP medicine and GP

Personal Factors		Exposure to Non-GP Medicine			Exposure to GP		
		Minor exposure to medicine	Substantial exposure to medicine	No exposure to medicine	Minor exposure to GP	Substantial exposure to GP	No exposure to GP
Being scientifically minded		0	5	2	3	1	3
Flexibility		19	37	33	20	20	49
Gender issues		0	5	0	4	1	0
Length of training		16	24	22	15	10	37
Liking the challenge		0	9	2	2	2	8
Money	Money	12	36	24	22	10	40
	Hygiene factor	3	13	11	8	3	16
	No influence	9	14	4	8	7	12
	Strong influence	0	3	3	1	0	5
Personality		18	29	17	23	7	35
Work-Life balance		28	73	50	57	25	70
Total coded references to above factors		**105**	**248**	**168**	**163**	**86**	**275**

The data was also analysed to search for correlations and differences regarding the impact of early exposure to medicine or general practice on personal choices. However, there were no noticeable linkages between the impact of personal factors on choice of specialty based on whether participants had previous exposure to medicine or general practice. It was noted that there were no real inferences in the context of the interviews themselves that would directly suggest these relationships.

Finding 17: No evidence was found of early exposure to medicine or general practice having any impact on participants' value on key personal factors that impact choice of specialty.

6.2.2 Social factors

In exploring the range of social factors that were identified, it became very clear that, whilst a number of different factors were explored during the interview process, there were a few that stood out as key issues across the entire cohort of participants. These are discussed in some detail below.

6.2.2.1 *Social factors by gender*

As far as I'm concerned, being any gender is a drag. --Patti Smith

Table 6.7 depicts the number of responses to social factors given by participants according to gender. There were some minor gender differences in relation to the impact of social factors, but the most common decision influencers were similar across both genders. These common influencers were academic or clinical role models and mentors, impact of peers, hospital system environment, and GP rotations. While the influence of peers received equal mention by both genders, academic and clinical role models were mentioned more frequently by female participants (68 coded references, compared with 49 for the males). Females brought more attention to the influence of the hospital environment (43 coded references), than did males (27 coded references).

Table 6.7 Social Factors by gender

Social Factors		Male	Female
Academic or clinical role models		49	68
Exposure via GP rotations		29	31
Hospital system environment		27	43
Impact of peers		52	53
Influence of family		26	26
Lived experiences		10	21
Media influences		9	12
Perception of prestige	Perception of prestige	34	42
	Hierarchy	3	4
	Stereotypes	7	10
Support networks		2	8
Total coded references to above factors		**248**	**318**

As the following quotes demonstrate, the influence of clinical role models was important for both male and female participants.

> *"I think I did [value my rotation] and that was probably impacted by my decision to do clinical school. And just to put that in perspective, the rural clinical school was in a town of 9,000. It was a small town run by GPs, and so I spent a whole year in general practice. That's where I did the whole year of clinical time."*
>
> *(Exposure via GP Rotations: GPR3 CM, Female, GP Registrar)*

> *"The [positive] experience, I think, really is a massive factor. So, it's probably the combination of the two—the experience is good and the role modelling is good. That's where I ended up being influenced towards general practice."*
>
> *(Influence of Academic or Clinical Role Models: GPEV, Male, General Practitioner)*

> *"I think I enrolled in my intern year, and I think the people around influenced me. The choices I was making, the role models, the GPs would come in, and I thought they were really nice people."*
>
> *(Influence of Academic or Clinical Role Models: GP SM, Female, General Practitioner)*

It was interesting to note that most participants acknowledged that interaction with their peers allowed them to learn about various specialties, but ultimately did not influence their choice of specialty, as illustrated by the following comments:

> *"Things, like, in your social factors, things, like, you had lots of discussions with your friends, which had some influence, but ultimately a lot of it was because of the experiences you had when you did lots of the different rotations. That's how you figure out what you like, what you didn't like."*
>
> *(Impact of Peers: GPR2 LT, Male, GP Registrar)*

> *"What other people say doesn't really affect me as much—unless I think that they have experienced both sides of the spectrum and that their opinion is worthy of me considering. But how many people can say that? . . . A surgeon is always going to say that they're the best, but they actually don't know what others' job scope is."*
>
> *Impact of Peers: MS1 AK, Female, Medical Student*

Most participants indicated that the poor environment in the hospital system was one of the factors that impacted on their choice of specialty and was a reason why they picked general practice. However, the female participants had a higher concern in relation to the negative aspects of the hospital environment, and were more likely to state this as an influencer (43 coded references). The following are representative statements from both males and females regarding the influence of the hospital environment.

> *"In Emergency, the consultant support was appalling, and the teaching was poor."*
>
> *(Hospital System Environment: GP BT, Male, General Practitioner)*

> *"I hated the hospital system. I hated the way hospital doctors spoke to patients. I hated the hierarchy. I hated the game. And I was actually quite disappointed by my hospital-based training."*
>
> *(Hospital System Environment: GP SM, Female, General Practitioner)*

> *"But after sitting in the hospital, I mean, I worked at them all, and thought, it's a pretty high risk, high-turnover, high-intensity obstetrics unit, and although that's absolutely what I would aim for if I did end up going down the obstetrics training path, it's not the life that I want to go down."*
>
> *(Hospital System Environment: PGY1 BS, Female, Prevocational Doctor)*

Perception of prestige across the cohorts was an interesting issue (34 responses from males, 42 from females). Whilst many acknowledged that they were aware of the prestige associated with various specialties (or the lack of in relation to general practice), the overwhelming majority of the participants discounted this as having any impact on their decision process. Participants acknowledged that some of their friends may have different opinions in relation to this issue, but they themselves were convinced that this was not a part of their decision process. This demonstrates that whilst stereotypes related to the importance of various specialties does exist, and is known to the emerging workforce, it does not have a substantial impact on their choices. The following are comments illustrating the impact of prestige on the decision-making of both genders.

"Never. I like to downplay prestige in status, including as it relates to being a doctor in general, so okay, I'm a doctor, but that's no different in real terms than being a lawyer, an accountant and whatever. You get your status—in my context, you get your status and prestige from the type of human being you are."

(Prestige: GP BT, Male, General Practitioner)

The quotes below outline that whilst some of the participants understood that the prevalent stereotypes did not view GPs as impressive a role as other specialties, rather than act as an inhibitor, it actually emboldened their decision.

"Yeah, it certainly decreased the impression of GPs, that they were considered lazy, dumb and stupid. And that certainly pushed me away from the thought of doing general practice."

(Prestige: GP GF, Male, General Practitioner)

"I don't think I was very aware of it during med. school, but definitely, once you start in the hospital system, and particularly in my hospital, which is very much physician-training focused, it's definitely almost a daily reminder, but it didn't change my thinking in anyway."

(Prestige: PGY2 NW, Female, Prevocational Doctor)

Finding 18: Both male and female participants acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.

Finding 19: Peer interaction did not have any impact on the decision to choose specialty for both male and female participants.

Finding 20: The hospital training environment had a negative impact and encouraged both male and female participants to consider non-hospital careers, with this being more prevalent with females.

Finding 21: Both male and female participants were aware that the various specialties in medicine had different levels of prestige associated with them, and that general practice was regarded poorly. However, this did not make any impact on their choice of specialty.

6.2.2.2 *Social factors by key age groups*

I am concerned with only one thing, the moral and social conditions of my generation.

Joyce Carol

The influence of social factors on the decision-making of the various age groups is depicted in table 6.8. The influence of academic and/or clinical role models, impact of peers and the hospital system environment were the key social factors influencing choice of specialty. The age groups 25–30 and 31–35 generally commented on these key issues more than any other age group, as can be seen in table 6.8. Those in the 31–35 age group had the most number of mentions in relation to impact of academic and clinical role models (51 coded references), followed by the 25–30 age group (31 coded references). This is easily explained by the fact that, typically, a vast majority of individual role models are found through interaction at universities, clinical rotations and training placements undertaken during this time by the participants.

Table 6.8 Social factors across the generations (by age group)

Social Factors		18–24	25–30	31–35	36–40	41–50
Experiential vs. non-experiential learning		4	12	6	7	2
Exposure via GP rotations		18	25	8	6	3
Hospital system environment		13	25	23	6	3
Impact of peers		22	33	33	12	5
Influence of academic or clinical role models and mentors		14	31	51	13	8
Influence of family		12	17	13	8	2
Media influences		6	5	9	0	1
Perception of prestige	Perception of prestige	8	30	22	12	4
	Hierarchy	1	0	3	2	1
	Stereotypes	3	6	3	3	2
Support networks		2	2	3	2	1
Total coded references		**103**	**186**	**174**	**71**	**32**

The impact of peers was the next most commonly talked about feature with both the 25–30 and 31–35 age groups (33 coded references each), which shows that they are acutely aware of these issues in relation to their decision. However, whilst impact of peers was talked about, none of the participants suggested that it was a decision influencer. The following two quotes are representative of the responses from the 30–35 age range regarding impact of peers.

> *"There is also potentially peer pressure related to it, so, I initially, I mean, I was really quite unsure about the decision of switching from surgery to general practice. All my friends told me, 'You're crazy! People would kill to be in your position. Are you sure you made the right decision?' I had surgical consultants telling me exactly the same thing—that I'm making the biggest mistake of my life—and that almost changed my mind about going into general practice. . . . Despite that pressure, I still chose [general practice]."*
>
> *(Impact of Peers: GP EV, Male, 30–35, General Practitioner)*

> *"I have 95 people in my class—I knew everyone. I knew everyone's wives, kids, dogs. I saw it. I think you chatted about what you wanted to do, but it was almost like, 'Oh, yeah, M***'s gonna do surgery, so I'll refer to him, and A**** is going to do anaesthetics, and K**** and J**** are going to be paediatricians,' and it was almost like we kind of got together, decided, spread out the numbers nicely in the herd, and that was fine. So, no, for me, that didn't make a lot of difference one way or another."*
>
> *(Impact of Peers: GPR2 KH, Female, 30–35, GP Registrar)*

The impact of role models was acknowledged strongly, and the following demonstrate that this was a key factor in the decision process for some.

> *"My general practice supervisors, for example, during the training that I elected, they had a huge influence, if that was sort of a role model for me. Now it's a role model for me. And that's influenced me a lot, especially now, it has influenced me, and also it's been in a negative sense, it has influenced me."*
>
> *(Influence of Academic or Clinical Role Models: GP SM, Female, 30–35 age group, General Practitioner)*

"I felt that I could relate to them, and in many ways this was more valuable. But the role models in general practice were better broadly, and I just felt that they were more approachable and more kind of real people, and a bit more reasonable and realistic and that's—I wanted to be more like them than other people."

(Influence of Academic or Clinical Role Models: GPR3 CM, Female, 25–30 age group, GP Registrar)

Impact of prestige was again similar across the different age groups. Everyone acknowledged the stereotypes and that general practice was regarded as inferior to other specialties, but this did not have an impact on their choice. The following two quotes are responses from two different age groups regarding the impact of prestige.

"The stereotypes are just pervasive and they extend well beyond medical school, you know, they extend into the junior doctor field and everything. GP is often viewed with the prefix 'just a GP'. Even though there's counter discourse at medical school, in the back of everyone's minds, it is seen as a hierarchy, and GP falls out the bottom."

(Prestige: MS4 GG, Male, 36–40 Age Group, Medical Student)

"I understand that, and you hear a lot about the prestige, you know, and a lot of quite amazing, like, derogatory talk, 'Oh, you're going to be just a GP'. That's hard to understand sometimes, but I don't think it has shaped me."

(Prestige: MS2 LM, Male, 21–25 Age Group, Medical Student)

Interestingly, the issue of prestige had a reverse impact amongst some participants who were keen to distance themselves from the more prestigious specialties, as demonstrated by the following:

"To me it is sort of like in reverse. I don't like the prestige, and I try to avoid it. . . . I just don't like all of the hype and discussion and almost the arrogance around some of the people that are associated with groups that get involved in climbing the ladder. I'm more inclined to keep away from things that are highly prestigious, and I just do something a bit more general and a bit more grounded."

(Prestige: PGY2 TW, Male, 21–25 Age Group, Prevocational Doctor)

The exposure to the hospital environment as a whole was most talked about by the 25–35 age group (25 coded responses). The predominant theme for this group was that they did not like the culture across most hospital-based specialties in relation to work-life balance, flexibility of rotations and the attitude of the consultants themselves. This particular aspect had a high impact in the overall decision since it was a clear indicator of their future careers inside and out of hospital environments. One of the younger participants described it this way:

> *"I see my last three years in working in hospitals hasn't been the happiest three years of my life. I hated working on night shifts. I can't cope with the sleep deprivation very well."*
>
> *(Hospital System Environment: PGY3 AG, Male, 2125 Age Group, Prevocational Doctor)*

Finding 22: All age groups acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.

Finding 23: Peer interaction did not have any impact on any of the participants regardless of age in choosing a specialty.

Finding 24: The hospital training environment generally had a negative impact across the age groups, and encouraged all participants to consider non-hospital careers.

Finding 25: All participants, regardless of age, acknowledged the issue of prestige associated with different specialties, but noted that this did not impact on choice of specialty

6.2.2.3 *Social factors by career stage*

You're definitely a different person at different stages in your life.

Ben Harper

Table 6.9 displays the number of responses to various social factors according to the career stage of the participants. Overall, the important social factors across the four cohorts were similar, with the key themes related to influence of role models, impact of peers, hospital environment and GP rotations as the key influencers. There were no noteworthy variations across the attitudes of the various cohorts based on career stage, which demonstrates that these particular factors are important across all the cohorts.

Table 6.9 Social factors by career stage

Social Factors		Medical Students	Prevocational Doctors	GP Registrars	Practising GPs
Experiential vs. non-experiential learning		13	7	2	9
Exposure via GP rotations		13	24	12	11
Hospital system environment		7	25	24	14
Impact of peers		26	30	27	22
Influence of academic or clinical role models and mentors		28	24	33	32
Influence of family		13	19	11	9
Media influences		1	8	8	4
Perception of prestige	Perception of prestige	13	22	27	14
	Hierarchy	3	1	0	3
	Stereotypes	6	5	1	5
Support networks		4	0	2	4
Total coded references to above factors		**127**	**165**	**147**	**127**

The following comments represent the views of participants at different stages in their careers regarding the influence of social factors on their decision-making.

"Well, we've had, like, exposure to GPs—we've gone to the hospitals, we've seen the cardiology side of things, we've seen the gastro side of things. We've seen, whatever, the neuro side of things. I mean, I wouldn't say I had huge exposure to every aspect of the hospital life, but it's helping to be more certain about what I want to do, what I don't want to do."

(Exposure to GP Rotations: MS2 AK, Female, 21–25 Age Group, Medical Student)

"The people you met within the specialties, they were sort of advertising—either a positive or negative advertising—but surgical people often have been very negative advertising for me, whereas, the sort of general practitioners and some of the general physicians in the rural area we're trying, they were just sort of, ' Look at me, I'm enjoying my profession'."

(Influence of Academic or Clinical Role Models: GPR2 FS, Male, 31–35 Age Group, GP Registrar)

"I don't think I was very aware of it during med. school, but definitely once you start in the hospital system, and particularly in my hospital, which is very much physician-training focused, it's definitely almost a daily reminder, and it didn't change my thinking in anyway. But you do… [think about it]."

(Prestige: PGY2 NW, Female, 31–35 Age Group, Prevocational Doctor)

Finding 26: All cohorts indicated the importance of GP rotations and role models regardless of career stage.

Finding 27: All cohorts were dissatisfied with their hospital terms and indicated that this was a contributing factor to specialty choice.

Finding 28: Issues related to the prestige and influence of peers did not affect the decision process for all cohorts.

6.2.2.4 *Social factors by area grew up in*

I grew up with the sea, and poverty for me was sumptuous;
then I lost the sea and found all luxuries grey and poverty unbearable.

Albert Camus

Whether the area in which one grew up makes a difference on how social factors impact choice of specialty was considered, and the coded responses are depicted in table 6.10. Again, the influence of role models, the impact of peers, and the hospital environment were mentioned most frequently across the cohorts regardless of area.

Table 6.10 Social factors by area grew up in

Social Factors		Urban or Outer Metro Area	Regional	Rural or Remote
Experiential vs. non-experiential learning		27	0	4
Exposure via GP rotations		52	3	5
Hospital system environment		57	5	8
Impact of peers		80	9	16
Influence of academic or clinical role models and mentors		85	9	23
Influence of family		43	1	8
Media influences		13	0	8
Perception of prestige	Perception of prestige	47	7	22
	Hierarchy	4	0	3
	Stereotypes	14	1	2
Support networks		8	1	1
Total coded references to above factors		**430**	**36**	**100**

People originally from urban or outer metro areas showed an overwhelming number of social factor citations (430 coded references)—almost four times more than people from rural or remote areas (100 coded references), and ten times more than the cohort from regional areas (36 coded references). On close analysis, even

after correcting for the number of participants from each background, this group still tended to have a greater mention of social factors in general. However, the rural and regional cohorts still cited this as a positive influencer. The process of correcting for the higher number of participants essentially involved looking at the percentages of respondents within each cohort that valued the social factors. This ensured that the results were not biased based on the number of participants from urban, regional or rural settings that participated in this research.

Influence of role models and GP rotations were seen as key influencers, with both negative and positive impacts based on the quality of the exposure and/or role model. The following quotes illustrate the importance of role models for those with both urban and rural origins.

> *"We did have a general practice placement in first year, and I do remember, I remember watching a GP take blood. But I always did enjoy going out to general practice because I thought that was real medicine."*
>
> *(Exposure to GP rotations: GP BT, Male, Urban Origin, General Practitioner)*

> *"It was the most boring thing that I did in medicine. I sat in the corner of the room and I didn't examine patients. I didn't really do anything much at all. I wasn't allowed to speak to the patients. He did the consultation. The patient went out and then he would tell me what the diagnosis was and something about that, and I may as well have not been there. And that was my perception of general practice."*
>
> *(Exposure to GP rotations: GPR3 AV, Male, Urban Origin, GP Registrar)*

> *"The person who I was probably most influenced by to start with was my first clinical tutor. . . . And I think a lot of people have experiences like that and lot of people end up in specialties that they had a really good role model or mentor."*
>
> *(Influence of Academic or Clinical Role Models: GPR2 DC, Male, Rural Origin, GP Registrar)*

Exposure to hospital rotations further proved to be a negative experience for most regardless of origin, as described by the following comment.

> *"I really enjoyed my hospital time, but it was great to leave as well. I think hospital sounds very negative but it's not. It is just the setup of the hospital, like the rush for*

the ward rooms in the morning, or even the ward rounds that [happen] too fast, and we're just, it's just draining. And this wasn't for me."

(Hospital System Environment: GPR2 MW, Female, GP Registrar)

Most participants acknowledged that their peers had some impact on the process by way of providing a source of information; however, in the context of other issues, which were seen as more important, it was not considered a decision influencer. Two participants with a regional origin described the influence of peer impact in this way:

"You were using those conversations to sort of mould your thinking, but it wasn't having a make or break impact."

(Impact of Peers GPR2 FS, Female, Regional Origin, GP Registrar)

"[Peers] are just an information source but not necessarily more powerful than any other source."

(Impact of Peers: MS2 ST, Female, Regional Origin, Medical Student)

Participants generally acknowledged awareness of issues related to prestige, but discounted this as having any impact on their decision process, as illustrated by the following quote:

"No I don't think it was. I mean it was, I think I had accepted and understood that general practice is probably not one of the choices with a higher level of prestige. But I don't think that was an active reason to [not pick general practice]."

(Prestige: GP AT, Female, Urban Origin, General Practitioner)

Finding 29: All participants were influenced by the impact of GP rotations and academic and clinical role models. However, participants with an urban origin tended to give greater importance to these issues.

Finding 30: All cohorts were dissatisfied with their hospital terms, and indicated that this was a contributing factor to their choice of specialty.

Finding 31: Issues related to prestige and influence of peers did not affect the decision process for all cohorts regardless of origin.

6.2.2.5 *Social factors by graduate status of university program*

Table 6.11 outlines the different responses to the influence of social factors depending on whether the participants were undergraduates or postgraduates. In general, there was no notable difference between those who went through undergraduate programs versus those who went through the postgraduate program. The key variables that were important for both groups were the influence of academic or clinical role models and mentors, followed by impact of peers, hospital system environment and exposure to rotations.

Table 6.11 Social factors by graduate status of university program

Social Factors		Undergraduate	Postgraduate
Experiential vs. Non-experiential learning		11	20
Exposure via GP rotations		30	30
Hospital system environment		40	30
Impact of peers		48	57
Influence of academic or clinical role models and mentors		61	56
Influence of family		24	28
Media influences		17	4
Perception of prestige	Perception of prestige	33	43
	Hierarchy	3	4
	Stereotypes	6	11
Support networks		6	4
Total coded references to above factors		**279**	**287**

The influence of academic and/or clinical role models was the most notable decision influencer in this category, and was a key influencer across the social factors.

The impact of the hospital system environment was also a strong influencer, but was predominantly referred to as a negative experience. General practice rotation, on the other hand, had both positive and negative experiences attached to it. Both these factors were part of the decision process for individuals, albeit to varying degrees.

Finding 32: Both undergraduate and postgraduate entrants had similar influencers in relation to key social factors. These included exposure to GP rotations, influence of clinical and academic role models and the hospital system environment.

6.2.2.6 *Social factors by childhood exposure to non-GP medicine and GP*

One of the luckiest things that can happen to you in life is, I think, to have a happy childhood.

Agatha Christie

Table 6.12 outlines the influence of social factors according to the degree of exposure to medicine (both GP and non-GP). The factors most frequently mentioned were influence of role models, impact of peers, hospital environment, influence of family and exposure via GP rotations.

Table 6.12 Social factors by childhood exposure to non-GP medicine and GP

Social Factors		Exposure to Non-GP Medicine			Exposure to GP		
		Substantial exposure to medicine	Minor exposure to medicine	No exposure to medicine	Substantial exposure to GP	Minor exposure to GP	No exposure to GP
Experiential vs. non-experiential learning		13	2	16	6	7	18
Exposure via GP rotations		27	14	17	15	17	28
Hospital system environment		44	10	15	15	23	32
Impact of peers		57	16	30	21	33	51
Influence of academic or clinical role models and mentors		56	16	43	18	33	66
Influence of family		36	7	9	17	16	19
Media influences		5	7	9	6	7	8
Perception of prestige	Perception of prestige	21	14	39	11	26	39
	Hierarchy	1	2	4	0	1	6
	Stereotypes	9	1	5	2	6	9
Support networks		7	2	1	2	2	6
Total		**276**	**91**	**188**	**113**	**171**	**282**

On careful analysis, there were only marginal differences amongst individuals who had exposure to medicine or general practice in their childhood versus those who didn't in relation to social factors impacting choice of specialty. By and large, it was found that individuals who had no exposure to medicine or general practice were just as likely to be impacted by the variety of social factors.

However, those with close family role models did indicate that this had some impact on their career choice and allowed them to have an early sub-conscious understanding of a career in medicine, as illustrated by the following comment:

> *"You know, one's a lawyer, one's in accounting, one's in building. Yeah, I didn't have the pressure to be a doctor, but I think that my mother probably did [have an impact]a bit because she's a GP and I saw her lifestyle as well—part-time GP and mother—and I guess, yeah, obviously, subconsciously it had a bit of an influence, but more so were my family and my career."*
>
> *(Influence of Family: MS2KM, Female, Substantial Exposure to GP, Medical Student)*

Finding 33: Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by social factors as participants who did.

Finding 34: Participants whose parents were in medicine had a greater, subconscious, understanding of careers in medicine and were likely to be influenced by that.

6.2.3 Professional factors

6.2.3.1 *Professional factors by gender*

I think a lot of times it's not money that's the primary motivation factor; it's the passion for your job and the professional and personal satisfaction that you get out of doing what you do that motivates you.

Martin Yan

Table 6.13 depicts the responses regarding the influence of professional factors on the decision-making of the participants when divided according to gender. Those factors receiving the most mention by both genders were connection with patients, professional autonomy and variety and scope of practice.

Table 6.13 Professional factors by gender

Professional Factors		Female	Male
Autonomy		5	3
Community-based holistic medicine		27	19
Connection with patients		82	53
	Continuity of care	27	25
	Interaction with patients	65	29
	Relationship with patients	34	17
Professional autonomy	Professional autonomy	49	29
	Business models	15	6
	Financial aspects	1	2
	Hours	23	13
Diagnostics		9	5
Job or professional satisfaction		17	8
Procedural aspects	Procedural aspects	32	18
	Important	10	8
	Not important	16	4
Variety and scope of practice		69	50
Total coded responses to above factors		**481**	**289**

One of the findings was that female participants were much more likely to refer to professional factors than their male counterparts (481 coded responses from females, compared with 289 coded responses from males). Connection with patients was the most important professional factor (82 coded responses from females, 53 from males), followed by scope of practice (69 from females, 50 from males) and professional autonomy (49 from females, 29 from males).

The following comments indicate that connection with patients was a key factor for both males and females.

> *"The fact that you have ongoing relationships with your patients, I like that. You meet someone when they are a baby—as a patient—and you keep seeing them through the course of their childhood into adulthood. Rather than those short interactions like you get to see all the people, say, in an emergency department setting. I like that."*
>
> *(Connection with Patients: PGY1 AC, Female, Prevocational Doctor)*

> *"Yes, that's why I'm interested in being a family GP. I like the continuity of care you get with the patient and their whole family and to be a part of community."*
>
> *(Connection with Patients: MS2 KM, Female, Medical Student)*

> *"I suppose the thing is, one thing I actually like is, despite the fact that I was actually avoiding long-term clinical care, it's one of those things that I really enjoy. I like seeing people get better over a long period of time. And I got that in psychiatry and I got that even more in general practice—that you get to see people go from very unwell to very well. So, and I honestly believe that the art of medicine is really much more important in general practice than within the hospital system."*
>
> *(Connection with Patients: GP GF, Male, General Practitioner)*

Scope of practice was seen as a clear advantage that general practice has over other specialties, and proved to be a strong motivator for most participants, as illustrated by the following quote:

> *"Oh it's [variety] actually more than enjoy. It's kind of essential for me because I get more easily bored and I get less effective. So, I'm my most effective when I'm quite stimulated and I guess stimulated by constantly doing different things. So, I actually seek different things, like, if I sense that the amount of different things I'm doing gets down to like, 20, I have to find other new things to do."*
>
> *(Variety and Scope of Practice: GP CB, Female, General Practitioner)*

A new area was the concept of professional autonomy and control. Whilst similar to flexibility in some respects, this was particularly associated with professional aspects, as opposed to personal aspects. It was found that most participants valued the ability to make professional decisions in relation to their work setting, hours of work, working environment and that this emerged as a key factor in favour of general practice. In particular, due to the stark contrast with the hospital environment, the ability to pick hours of work and better control the working conditions proved to be an important consideration for many. It was noted that this was a new area that has not been well-covered before in the literature.

The following quote illustrates the influence of professional autonomy on decision-making:

> *"It's so much better because I think what I had never appreciated from all my exposure, I can control my time, I can control the patient load, I can control who and what I do see. I can sub-specialise in various skills and areas if I want."*
>
> *(Professional Autonomy: GP BT, Male, General Practitioner)*

Procedural aspects of medicine and the concept of community-based holistic medicine remain as emerging factors that some individuals valued, but this was not seen as a dominant driver for the decision process as a whole. The following comments, one by a male, the other by a female, reflect upon the procedural aspects as influencers.

"I wanted to do medicine that was diverse where I was going to be doing a little bit all the time, and wanted to be able to use my hands a lot. So it needed to be relatively procedural, like, I didn't want to just be either just consulting all the time, like, what a psychiatrist does, and nor did I want to do something that was I was just going to be looking at pictures all the time, just what the radiologist does."

(Procedural Aspects: GP EV, Male, General Practitioner)

"I enjoyed the fact that you heal more holistically. You're actually worried about this like a social worker, and the fact that various hospitals were just so narrowly focused and … don't want to look past [the current illness]."

(Holistic medicine: PGY2 CC, Female, Prevocational Doctor)

Finding 35: Participants of both genders noted connection with patients, scope of practice and professional autonomy aspects of general practice as key influencers.

Finding 36: Females were more vocal about the importance of the key professional factors than their male counterparts.

Finding 37: Procedural aspects of medicine and a holistic approach to patient care were secondary professional factors that were noted as important.

6.2.3.2 *Professional factors by key age groups*

Table 6.14 displays the coded responses regarding professional factors according to the different age groups. Those factors most frequently mentioned by all age groups were connection with patients, professional autonomy, and variety and scope of practice as highlighted in yellow in the table.

Table 6.14 Professional factors by key age groups

Professional Factors		17–24	25–30	31–35	36–40	41–50
Autonomy		0	2	2	2	2
Community-based holistic medicine		11	20	7	4	4
Connection with patients		17	55	34	17	12
	Continuity of care	7	20	10	9	6
	Interaction with patients	12	41	27	9	5
	Relationship with patients	8	24	12	4	3
Professional autonomy	Professional autonomy	10	19	24	13	12
	Business models	0	8	3	4	6
	Financial aspects	0	0	0	0	3
	Hours	3	10	11	9	3
Diagnostics		1	2	1	8	2
Job or professional satisfaction		4	7	6	4	4
Procedural aspects	Procedural aspects	10	12	21	3	4
	Important	5	4	6	1	2
	Not important	3	4	12	0	1
Variety and scope of practice		15	34	32	23	15
Total coded references to above factors		**106**	**262**	**208**	**110**	**84**

The importance of professional factors remained consistent across all age groups, with all cohorts acknowledging the importance of key factors such as connection with patients, variety and scope of practice and ownership, and professional autonomy.

Connection with patients was a key factor which included issues related to continuity of care, interaction with patients and building long term relationships, as illustrated by the following quotes.

> *"The continuity of care is really important to me, so I really allow that. And also the broad scope of different kinds of patients because I have not been able to choose if I like working with women or if I like working with children or adults, and so on."*
>
> *(Connection with Patients: GPR1 AC, Female, 26–30 Age Group, GP Registrar)*

"I enjoy spending time talking with people. I enjoy time to make a difference in people's lives, I guess."

(Connection with Patients: GP MF, Female, 36–40 Age Group, General Practitioner)

Those belonging to the 31–35 age group were particularly interested in the elements related to the professional autonomy of general practice (24 coded responses). Issues such as connection with patients (34 coded responses) and variety of practice (32 coded responses) remained important for them, but by this stage of their careers, these elements had become a "given" in the context of already having chosen general practice.

The following comments refer to the influence of personal autonomy on the 31–35 age group.

"If someone were to take away my ability to make decisions to say that you can't choose where to send a patient, or you can't choose which patients you would see, and to take away that, and I guess that is taking away that control that you have within your environment."

(Professional Autonomy: GP AT, Female, 31–35 Age Group, General Practitioner)

"I enjoyed the autonomy, I enjoyed being my own boss, I enjoyed the fact that I could say, 'Okay, I am doing this session from 9 to 3, and I am going to close my books and do something else. Do some home visits or whatever'."

(Professional Autonomy: GPR3 JM, Female, 31–35 Age Group, GP Registrar)

The younger cohorts tended to mirror the trend of the older age groups, but were more likely to talk about their connection with patients (17 coded responses for the 17–24 age group, 55 coded responses for the 25–30 age group) and variety and scope of practice (15 coded responses for the 17–24 age group, 34 coded responses for the 25–30 age group), as opposed to any other variable. Potentially, this is linked to the broad generalisation that general practice offers that kind of patient engagement as a key differential to hospital-based careers.

The following quotes, representing the views of the youngest cohort, indicate the influence of the two factors of variety and scope, and connection with patients.

> *"Yeah, the variety and scope of GP is a big factor. Being able to see a patient, half an hour after the next and not knowing what problem's gonna walk in the door—that part of general practice is extremely inviting and enticing, yeah."*
>
> *(Variety and Scope: MS2 LM, Male, 17–24 Age Group, Medical Student)*

> *"So, yeah, I've talked to few people, and then I did go to that [careers night] the other night and just realised that's the most perfect way for me to do what I wanted to do. So, I enjoy the continuity of seeing patients, rather than just clinically, seeing them once and never again."*
>
> *(Connection with Patients: PGY1 BS, Female, 17–24 Age Group, Prevocational Doctor)*

Procedural aspects of medicine emerged as a factor that some individuals valued, but this was not seen as a dominant driver for the decision process.

Finding 38: Importance of professional factors was consistent across all age groups, with all cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.

Finding 39: There were no distinctions in relation to the relative importance of various professional factors on the basis of age differences.

6.2.3.3 *Professional factors stage of training*

> *I have a lot of different stages in my life when training has been easy or hard. Now, it seems that I have been training for so long that it has become almost second nature to me.*
>
> Oksana Baiul

The responses regarding the influence of professional factors on participants at various stages of training are displayed in Table 6.15. Practising GPs rated professional factors higher than any other cohort as a key influencer in their choice of specialty (227 coded references). This group mentioned variety and scope of practice (40 coded references) and professional autonomy (30 coded references) more frequently than any other cohort, whilst connection with patients remained a

consistent theme across all participants. Prevocational doctors were the second cohort that rated professional factors highly (221 coded references) and this was the group that referred to connection with patients (44 coded references) more often than any other cohort.

Table 6.15 Professional factors stage of training

Professional Factors		Medical Students	Prevocational Doctors	GP Registrars	Practising GPs
Autonomy		1	2	2	3
Community-based holistic medicine		6	22	9	9
Connection with patients		24	44	31	36
	Continuity of care	3	15	16	18
	Interaction with patients	21	35	20	18
	Relationship with patients	7	19	16	9
Professional Autonomy	Professional autonomy	8	18	22	30
	Business models	1	5	6	9
	Financial aspects	0	0	0	3
	Hours	7	4	14	11
Diagnostics		5	0	1	8
Job or professional satisfaction		6	6	4	9
Procedural aspects	Procedural aspects	15	14	8	13
	Important	5	4	5	4
	Not important	5	6	2	7
Variety and scope of practice		27	27	25	40
Total coded references to above factors		**141**	**221**	**181**	**227**

Professional autonomy and variety and scope of practice were common themes that attracted individuals towards general practice as illustrated in the following quotes:

> *"Just doing whatever you can to get over that next hurdle, and when you're in GP training you could kind of see the light at the end of the tunnel, and you do actually have some rights and some ability to negotiate, which previously, certainly in my training, I did not have very much of at all."*
>
> *(Professional Autonomy: GPR3 CM, Female, GP Registrar)*

> *"For me, it was the variety was that the major thing. So, I had sort of gone to a specialist, and seeing surgeons thought, I just don't know how they do the same thing every day, all day. Or just to be, my example was always if you were an ophthalmologist and just looked at eyes all day, every day—how boring."*
>
> *(Variety and Scope: GP AT, Female, General Practitioner)*

Prevocational doctors and medical students were less likely to relate to professional autonomy (18 coded references, 8 coded references, respectively), and were more influenced by the more traditional factors such as connection with patients (44 coded references and 24 coded references, respectively) and variety of practice (27 coded references each). The two quotes, both from medical students, illustrate the influence of connection with patients and variety of practice.

> *"I could feel that I was able to be involved with the patient on a very personal level, and the team really making you feel, like, involved with the team, and they gave you jobs, and you actually felt like you're involved in looking after the patient. I think that definitely has a positive influence at this point, anyway."*
>
> *(Connection with Patients: MS4 GG, Female, 36-40 Age Group, Medical Student)*

> *"So, getting exposure to them also I got a mentor. So, second semester, I had a GP mentor who does a lot of different things. There's a lot of variety, and I think he sort of inspired me to look at general practice with new eyes because it doesn't just to have to be colds and flu."*
>
> *(Variety and Scope: MS2 DT, Male Medical Student)*

Combining the two groups of prevocational doctors and medical students shows that they gave greater importance to procedural aspects of medicine (a total of 29 coded references) and the holistic nature of medicine (a total of 28 coded references), as opposed to their senior counterparts (total of 21 and 18 references, respectively). The following quotes highlight the influence of these particular factors.

> *"I like the procedural aspects. I like working acutely in rotations in the emergency department."*
>
> *(Procedural Aspects: MS4 RG, Male, Medical Student)*

> *"And I guess, from a professional side, the key things you've sort of mentioned is, this whole interaction and relations having been part of that holistic care with the patient that was really important to you, which is perhaps not that easy to get in quite a few of the other specialties."*
>
> *(Holistic Medicine: PGY2 TW, Male, Prevocational Doctor)*

Finding 40: Connection with patients remained a key factor and was consistent for all cohorts. Prevocational doctors valued this factor over all other professional factors.

Finding 41: Practising GPs valued variety and scope of practice more than any other cohort.

Finding 42: Cohorts in later stages of their career (GP registrars and practising GPs) valued professional autonomy more than others.

6.2.3.4 *Professional factors by area grew up in*

Individuals, too, who cultivate a variety of skills, seem brighter, more energetic and more adaptable than those who know how to do one thing only.

Robert Shea

Table 6.16 displays the results of responses regarding the influence of professional factors according to the area in which the participants grew up. Connection with patients, variety and scope of practice and professional autonomy received the most references across the cohorts.

Table 6.16 Professional factors by area grew up in

Professional Factors		Urban	Regional	Rural or Remote
Autonomy		7	0	1
Community-based holistic medicine		36	0	10
Connection with Patients		99	12	24
	Continuity of care	34	4	14
	Interaction with patients	75	7	12
	Relationship with patients	39	5	7
Professional autonomy	Professional autonomy	51	7	20
	Business models	15	2	4
	Financial aspects	2	0	1
	Hours	23	4	9
Diagnostics		10	1	3
Job or professional satisfaction		21	0	4
Procedural aspects	Procedural aspects	33	5	12
	Important	10	1	7
	Not important	15	3	2
Variety and scope of practice		82	8	29
Total of coded references to above factors		**552**	**59**	**159**

Receiving over 500 comments across the data, professional factors emerged as most important for those who had grown up in an urban setting. This result is partially biased since the majority of participants responded to this attribute. However, even after correcting for this, participants from an urban origin were more likely to quote

professional factors as decision drivers. The process of correcting for the higher number of participants essentially involved looking at the percentages of respondents within each cohort that valued the professional factors. This ensured that the results were not biased based on the number of participants from urban, regional or rural settings that participated in this research.

Regarding the influence of professional factors, those from an urban background offered these comments:

> *"I wanted something that would give me better hours. I've had enough of the hours that emergency medicine for several years had given me, which was statistically two thirds of my time—evenings, nights, weekends."*
>
> *(Professional Autonomy: GP BT, Male, Urban Origin, General Practitioner)*

> *"Yeah. I like variety. I supposed I would be more attracted to medicine that's clinically offered or made me look at lots of different areas of medicine, rather than just one."*
>
> *(Variety and Scope: PGY2 TW, Male, Urban Origin, Prevocational Doctor)*

> *"To some degree you do have control over the kind of patients that come and see you and the interactions that you have with them, and you know different GPs will have quite a different subset of patients. It's important to recognise that you have some control over that as well."*
>
> *(Professional Autonomy: GP MF, Female, Urban Origin, General Practitioner)*

Rural students also mentioned these factors frequently, as did the regional cohort. Nevertheless, it is important to note that each cohort still valued connection with patients, professional autonomy and variety and scope of practice as key influencers above all other factors. Comments by participants from rural or regional backgrounds are represented by the following:

> *"I like seeing people get better over a long period of time. And I got that in psychiatry and I got that even more in general practice—that you get to see people go from very unwell to very well. So, and I honestly believe that the art of medicine is really much more important in general practice than within the hospital system."*
>
> *(Connection with Patients: GP GF, Male, Regional Origin, General Practitioner)*

"So, general practice was the ideal thing for me because I could see all the tests and I could be diagnostic with this, and I can work in the hospital as a VMO. But that was the perfect thing for me."

(Variety and Scope: GP CB, Female, Rural Origin, General Practitioner)

"The main influence is really that I'm boss, so that you can choose how much you work and how much free time you have, without losing the depth of medicine and/or the depth of the scope of patients. So, that was, I think, being that I'm boss and being at general practice or doing general medicine, where it sees everything that was really important."

(Professional Autonomy: GPR2 FS, Male, Rural Origin, GP Registrar)

Procedural aspects of medicine and the concept of community-based holistic medicine emerged as factors that some individuals valued, but this was not seen as a dominant driver for the decision process as a whole. The following quote illustrates the influence of procedural aspects on one of the prevocational doctors.

"I also enjoyed doing minor procedures. So, in each department, one of my favourite things to do was to suture patients—that's really big, that. And I determined dermatology and really enjoyed the procedures and the work on the visual aspects of that."

(Procedural Aspects: PGY3 AG, Male, Urban Origin, Prevocational Doctor)

Finding 43: Professional factors were more prominent for individuals who had grown up in an urban setting.

Finding 44: Connection with patients, variety and scope of practice, and professional autonomy remained the most important factors influencing choice of specialty regardless of origin.

6.2.3.5 *Professional factors by graduate status of university program*

Depicted by table 6.17 are the responses of the participants, categorised according to whether they were undergraduates and postgraduates, regarding the influence of professional factors on their decision-making. Undergraduate students rated professional factors more highly than the postgraduate entrants (408 coded references as compared to 362 coded references), however, the key important themes remained consistent for both cohorts.

Table 6.17 Professional factors by graduate status of university program

Professional Factors		Undergraduate	Postgraduate
Autonomy		5	3
Community-based holistic medicine		34	12
Connection with patients		61	74
	Continuity of care	26	26
	Interaction with patients	39	55
	Relationship with patients	23	28
Professional autonomy	Professional autonomy	47	31
	Business models	10	11
	Financial aspects	3	0
	Hours	18	18
Diagnostics		10	4
Job or professional satisfaction		13	12
Procedural aspects	Procedural aspects	29	21
	Important	15	3
	Not important	9	11
Variety and scope of practice		66	53
Total coded references to above factors		**408**	**362**

In general, there was no notable difference between those who were going through undergraduate programs versus those who were going through the postgraduate program. The key variables that were important for both groups were connection with patients, professional autonomy and variety of practice.

Undergraduate students were particularly influenced by connection with patients (61 coded references) and variety and scope of practice (66 coded references) as outlined by the following quotes:

> *"Yeah, I always wanted to be in conscious medicine, for want of a better expression. I want to be able to talk, communicate and engage with my patient, and both surgical and anaesthetic fields were out for those reasons."*
>
> *(Connection with Patients: GP BT, Male, Undergraduate Program, General Practitioner)*

> *"I don't want to become a full-time academic or researcher, or even I'd thought about moving into being a more development person in health policy. I always want to feel like a doctor, which to me is when I get in a room alone with the patient and try and help them with the problem."*
>
> *(Connection with Patients: GPR3 AK, Female, Undergraduate Program, GP Registrar)*

Postgraduate students also favoured similar themes, as illustrated by the following quotes:

> *"I like the variety of presentations that you can have with those undifferentiated problems, but sometimes it scares the crap out of you, but sometimes it's, like, oh, I love it. I know what to do. That you can see a range, so, you can see babies to elderly people, you can follow families through, and then you also don't need to do that all straight away."*
>
> *(Variety and Scope: GP MM, Female, Postgraduate Program, General Practitioner)*

> *"I like the autonomy of GP. I know a lot of people don't like not working in a team, but I love it. I suppose range and autonomy are my two big ones."*
>
> *(Professional Autonomy: GPR2 KH, Female, Postgraduate Program, GP Registrar)*

Finding 45: There were no notable differences in relation to professional factors amongst undergraduate and postgraduate entrants, with both cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.

6.2.3.6 *Professional factors by childhood exposure to non-GP medicine and GP*

Responses about the influence of professional factors when the participants were considered according to the degree to which they had been exposed to medicine as children are given in table 6.18.

Table 6.18 Professional factors by childhood exposure to non-GP medicine and GP

Professional Factors		Substantial exposure to medicine	Minor exposure to medicine	No exposure to medicine	Substantial exposure to GP	Minor exposure to GP	No exposure to GP
Autonomy		5	1	0	0	3	5
Community-based holistic medicine		21	16	7	12	21	13
Connection with patients		58	27	46	18	53	64
	Continuity of care	22	14	16	13	19	20
	Interaction with patients	41	19	32	7	39	48
	Relationship with patients	15	14	20	5	22	24
Professional autonomy	Professional autonomy	30	22	23	16	23	39
	Business models	9	6	4	5	8	8
	Financial aspects	2	1	0	2	0	1
	Hours	15	7	12	6	13	17
Diagnostics		6	5	2	6	4	4
Job or professional satisfaction		14	3	6	2	9	14
Procedural aspects	Procedural aspects	18	9	23	6	11	33
	Important	8	3	7	4	6	8
	Not important	7	4	9	2	4	14
Variety and scope of practice		50	25	40	29	35	55
Total coded references		**321**	**176**	**247**	**133**	**270**	**367**

Despite the difference across the number of quotations from each area, upon analysis of the actual content of these remarks, there were no notable correlations between exposure or non-exposure to medicine and the importance of professional factors in general.

Connection with patients, professional autonomy, and variety and scope of practice remained the key factors that people talked about as being key drivers in this context. Indications of the relationship between childhood exposure to medicine and professional factors are given in the following quotes.

> *"Medicine was something that I've always wanted to do, sort of like a childhood thing. But more than that, something that I could use to help people and interact with people at the same time, as opposed to just being someone who did research and didn't really see the fruits of their labour in a direct way."*
>
> *(Connection with Patients: MS1 AK, Female, Substantial Exposure to Medicine, Medical Student)*

> *"Yes. So it was, for me, personally, it was more important that I had control over what my career and life-balance was going to be about, versus the amount of money and prestige that I was going to get."*
>
> *(Professional Autonomy: GP EV, Male, No Exposure to Medicine, General Practitioner)*

> *"Yeah, the variety and scope of a GP surgery is a big factor. Being able to see a patient, half an hour after the next and not knowing what problems are going to walk in the door—that part of general practice is extremely inviting and enticing, yeah."*
>
> *(Variety and Scope:MS2 LM, Male, No Exposure to GP, Medical Student)*

> *"I love women's health. I love paediatrics and I like palliative care, so, all the different aspects of heath. It is community-based and you are part of the community, and that a whole family might come and see you, that's important to me."*
>
> *(Holistic Medicine: PGY1 AC, Female, Minor Exposure to GP, Prevocational Doctor)*

Finding 46: Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by professional factors as participants who did.

Finding 47: There were no noticeable distinctions in the influence of professional factors based on early exposure or non-exposure to medicine or general practice.

6.2.4 Life events

It's not the events of our lives that shape us, but our beliefs as to what those events mean.

Tony Robbins

In exploring the various personal, social and professional factors during this research, it was noticed that there were a number of participants who were influenced by other factors that did not fit under any of these nodes. These factors were sometimes driven by a key event in the participant's life, or linked to a practical opportunity that became available to them, or to the timing of a certain event in their personal and/or professional lives.

Whilst this was not a dominant theme across the cohort of participants interviewed, during the interview process, it became clear that there were a number of individuals who had made their decision due to practical opportunities and significant events in their life, rather than anything else. It was noted that these issues were different from the factors captured under other nodes and labelled them as "life events"; these are discussed below.

6.2.4.1 *Life events by gender*

Timing really is nearly everything. And what it isn't, circumstance makes up for.

Steven Van Zandt

Table 6.19 depicts responses categorised under the theme of "life events", with the participants divided according to gender. The two most frequently mentioned factors influencing the decision-making of both males and females were practical opportunities and timing.

Table 6.19 Life events by gender

Life Events	Male	Female
Burnout - personal experience of	1	2
Ease or difficulty of course or specialty stream	2	3
How people come to their decisions	4	2
Access to information	11	19
Practical opportunities	30	31
Timing	36	69
Total coded references according to above factors	**106**	**153**

Male and female participants noted with similar frequency the importance of practical opportunities influencing the decision process (30 coded references and 31 coded references, respectively), as represented by the following quotes:

> *"I think it [picking hospital-based specialties] was partially just the very nature of the fact that you were in hospital all the time."*
>
> *(Practical Opportunity: GP BT, Male, General Practitioner)*

> *"The other aspect was also just the exposure and the variety of opportunities that I was able to take advantage of along the way."*
>
> *(Practical Opportunity: GP AT, Female, General Practitioner)*

Whilst timing was also noted as important by both genders, female participants referred to this factor more often (69 coded references, compared with 36 coded references from males), which indicates that they are more susceptible to career decisions at certain times in their life. The comments below, both by females, illustrate the relevance of timing as an influencer.

"I think at the stage when I was making the decision about which speciality I wanted to do, I was single, I didn't have an imminent family, so I was quite prepared to do so, if I decided I wanted to do a training program that was eight years."
(Timing: GP MF, Female, General Practitioner)

"Before getting to med. school, I thought, am I actually ready to devote this time, give up a few years, have kids a bit later?"
(Timing: MS2 AK, Female, Medical Student)

Finding 48: Practical opportunities were a factor that affected some participants' decision to choose a particular specialty, and this was equally important for male and female participants.

Finding 49: Females were more likely to be affected by the timing of key life events, and this was more likely to influence their choice of specialty, as compared to their male counterparts.

6.2.4.2 *Life events by key age groups*

None of my own experiences ever finds its way into my work.
However, the stages of my life—motherhood, middle age, etc.—often influence my subject matter.
Anne Tyler

The relative influence of life events on participants divided according to key age groups is shown in table 6.20. Collectively those in the 25–30 and 31–35 age group mentioned life events more often (55 coded references and 52 coded references, respectively), followed closely by the 17–24 group (48 coded references).

Practical opportunities remained most important for the youngest cohort (16 coded references), and timing was the most important for the 31–35 and 25–30 age groups (32 coded references and 29 coded references, respectively). This is important to note, since most people choose their careers between the ages of 25 and 35 years. As such, ensuring that practical opportunities are maintained and strengthened remains a key attribute for the future.

Table 6.20 Life events according to key age groups

Life Events	17–24	25–30	31–35	36–40	41–50
Burnout - personal experience of	0	0	2	0	1
Ease or difficulty of course or specialty stream	2	0	0	2	1
How people come to their decisions	1	0	0	3	2
Access to information	6	11	9	2	2
Practical opportunities	16	15	9	11	10
Timing	23	29	32	19	2
Total coded references to above factors	**48**	**55**	**52**	**37**	**18**

From a timing perspective, it is likely that people in the 25-30 and 31-35 age groups are actively thinking about their preconceptions towards one specific career, and balancing that with opportunities to make a more-informed decision. The following quotes illustrate the importance of timing on the different age groups.

> *"Visa status. Whether or not I can actually live in a place where I want to get trained, I think that's a big deal. Because I can talk about wanting to live here, I can talk about wanting to live in the States and get trained and work. But licensing procedures is complicated for every country. So, what if I decided I want to live in the same place? What if I don't get through the licensing examinations? It kind of screws things up, and I can't do it."*
>
> *(Practical Opportunities: MS2 AK Female, 17–24 Age Group, Medical Student)*

> *"Yes, it's very hard to know if I hadn't had those opportunities to sit in with those GPS really early on and also a bit later in med school—I guess I may not have been as aware of what the career offered."*
>
> *(Practical Opportunities: GP MF, Female, 25–35 Age Group, General Practitioner)*

"Probably, the motherhood lifestyle, I didn't really think about it when I was at 15, 20 years old, but now that I'm married and all our friends are starting to have kids and getting married and all that, then it sort of completely turns it."

(Timing: PGY2 CC, Female, 25–35 Age Group, Pre-vocational doctor)

Finding 50: Practical opportunities and timing were key factors that were important across all age groups.

Finding 51: Those in the 25–30 and 31–35 age groups were more likely to be influenced by issues related to timing in comparison to those in the 17–24 age group. The 36–50 age group was the least influenced by this across the cohort.

6.2.4.3 *Life events by stage of training*

All of the very important events in my life happen by chance.

Natalia Makarova

Table 6.21 displays the number of references to life events when the participants were considered according to their stage of training.

Table 6.21 Life events by stage of training

Life Events	Medical Students	Prevocational Doctors	GP Registrars	Practising GPs
Burnout - personal experience of	1	1	0	1
Ease or difficulty of course or specialty stream	1	1	0	3
How people come to their decisions	3	0	0	3
Access to information	5	10	11	4
Practical opportunities	12	28	3	18
Timing	27	27	28	23
Total	**49**	**67**	**42**	**52**

Overall, practical opportunities and timing were the key threads when cohorts were considered across their various stages of training.

Prevocational doctors seemed to be most influenced by the availability of practical opportunities (28 coded references). This is a key finding because it demonstrates that available opportunities can influence choice of specialty during the hospital years when prevocational doctors are finally ready to take this step in their career cycle. The comments below highlight the influence of opportunities on the decision-making of prevocational doctors.

> *"I think that also, having this other job that I really enjoy as well certainly influences my decision in what I can do and still keep that really valued."*
>
> *(Practical Opportunities: PGY4 AR, Female, Prevocational Doctor)*

> *"Obviously, my clinical experience that I've been getting as part of the course, and with scholarships and placements and things, they are starting to shape my choice."*
>
> *(Practical Opportunities: PGY1 CM, Male, Prevocational Doctor)*

The impact of timing on events was equally important regardless of the stage of training, as illustrated by the following quotes:

> *"Most people I've spoken to at that age, they just want to be a doctor and really haven't decided what they wanted to do. The bulk of people I talk to sort of make their decision either towards the end of med. school or sometimes in hospital after they've had exposure."*
>
> *(Timing: GP GL, Male General Practitioner)*

> *"My priorities will no doubt change over the next four, five, six years. So, it's hard to say what I'll be thinking then and what my priority will be then. So, that, yeah, it makes it a little bit difficult. But I can see that the key things that are important to me now, which are based on my personality, the way my brain thinks, those things aren't going to change."*
>
> *(Timing: MS2 DT, Male, Medical Student)*

Finding 52: Practical opportunities were an important factor that affected some participants' decision to choose a particular specialty, and this was particularly important for prevocational doctors.

Finding 53: The impact of the timing of key life events was an important factor that influenced choice of specialty regardless of the stage of training.

6.2.4.4 *Life events by area grew up in*

In the city a funeral is just an interruption of traffic;
in the country it is a form of popular entertainment.

George Ade

Table 6.22 displays responses to life events when participants were grouped according to the area in which they were raised.

Table 6.22 Life events by area grew up in

Life Events	Urban or Outer Metro Area	Regional	Rural or Remote
Burnout - personal experience of	3	0	0
Ease or difficulty of course or specialty stream	5	0	0
How people come to their decisions	3	0	3
Access to information	18	1	11
Practical opportunities	45	0	16
Timing	80	12	13
Total	**154**	**13**	**43**

Practical opportunities and timing remained the dominant themes, but there was an interesting contrast in how these themes related to individuals based on where they had spent their growing up years.

Both practical opportunities (45 coded references) and timing (80 coded references) were very dominant themes for individuals with an urban upbringing, with their rural and regional counterparts mentioning these themes less frequently (a total of 13 and 12 coded references, respectively). Even when adjusting for a greater proportion of urban participants, this difference remained notable. The process of correcting for the higher number of participants essentially involved looking at the percentages of respondents within each cohort that valued the life factors. This ensured that the results were not biased based on the number of participants from urban, regional or rural settings that participated in this research.

The following quotes point to the influence of practical opportunities and timing on those from different backgrounds.

> *"I think I enrolled in my intern year and I think it was influenced by the people around me—the choices I was making, the role models."*
>
> *(Timing: GP SM, Female, Urban, General Practitioner)*

> *"I certainly learned more about general practice and the opportunities within that specialty as I went through the course as well, because I was continually investigating, and you get exposed to people."*
>
> *(Practical Opportunities: PGY4 AR, Female, Urban, Prevocational Doctor)*

> *"It did develop a fair bit as I was going to med. school. Having a QLD health scholarship helped send me towards the rural generalist's pathway, which is not descriptively GP, but there is an awful lot, I mean, that attracted me and helped me to go through it."*
>
> *(Practical Opportunities: MS4 GG, Male, Rural, Medical Student)*

The aspect of choice is much more predominant in urban centres in all aspects of life, and this is clearly represented in this domain. Urban participants claimed their decision was in part determined by practical opportunities that had been offered to study medicine and/or general practice. Likewise, timing was quoted more often by

urban participants than regional and rural ones. The following quotes refer to the influence of timing on the decisions of those with an urban background.

> *"I think I have tried every job in the hospital, and every one of them had pros and cons, and for me it just was a complete easy decision to go into general practice because I ruled out so many other things. Knowing I was a generalist made it just easy."*
>
> *(Practical Opportunities: GPR3 AK, Female, Urban, GP Registrar)*

> *"And again, it probably comes to the ED term when, yeah, if someone comes in undifferentiated and it's a real sort of clue-finding mission, and getting some blood test done, and taking a history. I really started to enjoy that, but then, as I said, I wanted to have the continuity as well. So, in that sense, yeah, it was one that came along after I graduated, sort of. That is, all was really heading towards general practice, I guess."*
>
> (Timing: GPR1 GC, Male, Urban, GP Registrar)

Overall, the results for this query suggest urban participants had more diverse opportunities, which means that the ones that they did choose had a greater impact on their final career decision.

Finding 54: Practical opportunities and timing were important factors that affected participants from an urban background.

6.2.4.5 *Life events by graduate status of university program*

Ability is nothing without opportunity.

Napoleon Bonaparte

Table 6.23 outlines the responses in relation to the impact of life events on the decision-making of the participants according to whether they were undergraduates or postgraduates. Timing, practical opportunities and access to information were the three areas mentioned most frequently by both cohorts.

Table 6.23 Life events by graduate status of university program

Life Events	Undergraduate	Postgraduate
Burnout - personal experience of	1	2
Ease or difficulty of course or specialty stream	2	3
How people come to their decisions	3	3
Access to information	14	16
Practical opportunities	32	29
Timing	41	64
Total of coded responses to above factors	**93**	**117**

Participants entering medicine via an undergraduate program, as opposed to postgraduates, were largely similar in how they were impacted by life events. Timing was a dominant factor for postgraduate entrants (64 coded references) as compared to practical opportunities (29 coded references).

In the case of postgraduates, most of the participants confirmed that they had a clear picture of what sort of doctor they wanted to be prior to starting medicine. This was usually linked to having had more life experiences, and, hence, their decision was usually better-informed.

In the case of undergraduate participants, there was a general need for more information regarding GP training. However, on balance, timing remained a key factor (41 coded references).

The following quotes highlight the influence of various life experiences on participants in both degree programs.

> *"I didn't really have a concept of what medicine itself implies, sort of, like, what your options actually are. Then it really came to me once I began the course and the clinical medicine, I think, really."*
>
> *(Access to Information: PGY1 TW, Undergraduate, Male, Prevocational Doctor)*

> *"I think that's really all I had. I think you had a pretty much straight forward approach to what you wanted, which is good, but what was interesting to hear was that even though you had a preconceived idea of where you wanted to be, ultimately, as you went through that journey, some of the key factors that further strengthened or confirmed that that was the right choice you were making, were similar to what others think about not having premed. in their mind, if that makes sense."*
>
> *(Access to Information: GPR2 MW, Female, Postgraduate, GP Registrar)*

> *"And I think that the other aspect was also just the exposure and the variety of opportunities that I was able to take advantage of along the way."*
>
> *(Practice Opportunities: GPAT, Female, Postgraduate, General Practitioner)*

Finding 55: Both undergraduate and postgraduate participants noted the importance of practical opportunities and timing in picking choice of specialty, with timing being a key factor for postgraduate participants.

6.2.4.6 *Life events by childhood exposure to non-GP medicine and GP*

They say your childhood influences your tastes and interests, or your approach if you're an artist.
So what you create, whatever you saw, whatever your childhood was like,
it influences how you're going to end up.

Brett Ratner

Mention of the influence of life events on choice of specialty in relation to the degree of exposure to medicine as children is displayed in table 6.24. Again, practical opportunities and timing were the most frequently mentioned factors.

Table 6.24 Life events by childhood exposure to non-GP medicine and GP

Life Events	Childhood Exposure to Non-GP medicine			Childhood Exposure to GP		
	Substantial exposure to medicine	Minor exposure to medicine	No exposure to medicine	Substantial exposure to GP	Minor exposure to GP	No exposure to GP
Burnout - personal experience of	1	0	2	1	0	2
Ease or difficulty of course or specialty stream	2	1	2	1	0	4
How people come to their decisions	3	2	1	3	1	2
Access to information	8	10	12	7	11	12
Practical opportunities	32	14	15	15	16	30
Timing	47	18	40	18	24	63
Total coded references to above factors	**93**	**45**	**72**	**45**	**52**	**113**

When corrected for representation, there were no noticeable differences amongst participants who had substantial childhood exposure to general practice versus those who did not. The following quote represents comments made in this area.

> "*I think that my mother probably did [have an impact] a bit because she's a GP and I saw her lifestyle as well—part-time GP and mother—and I guess, yeah, obviously, subconsciously it had a bit of an influence, but more so did my family and my career."*
>
> *(Practical Opportunities: MS2 KM, Female, Substantial Exposure to GP, Medical Student)*

However, those participants with broad exposure to medicine in general tended to be more influenced by practical opportunities and timing, as illustrated by the following:

> *"I was fairly certain from the beginning that I wanted to go into general practice. I've sort of had some experience with various surgeons and specialists along the way, and the thing that I thought looked the most interesting was general practice."*
>
> *(Timing: GP AT, Female, Substantial Exposure to Medicine, General Practitioner)*

Finding 56: Participants with early exposure to medicine were more likely to reference practical opportunities and timing as key factors that influenced choice of specialty.

6.2.5 Primary and secondary drivers

As part of the interview process, specific questions were asked to identify the primary and secondary drivers that ultimately impacted on participants' choice of specialty. The importance of this cannot be understated because, regardless of underlying factors, these were the key factors that the participants attributed as ultimately responsible for their choice of specialty. This was done to ensure that, whilst the research accounted for and noted the range of variables that impacted choice of specialty for each individual, there was still a level of authentication that distilled the most important factors impacting on the final decision. In some cases, this was achieved by asking the participants directly, while in others, it was inferred from the interview. A detailed summary of the primary and secondary choice factors is included in Appendix 10. The findings below compare this across key variables such as age, gender, origin, stage of training and exposure to medicine.

6.2.5.1 *Primary and secondary drivers by gender*

Table 6.25 depicts primary and secondary drivers by percentage according to their mention by males or females. An analysis of the data indicated that male participants were most likely to pick professional factors as a primary driver (38%), followed by personal (33%) and social (29%) factors. Female participants were, however, more likely to pick personal factors (50%) as the primary driver, followed by professional (35%) and social factors (15%).

Table 6.25 Primary and secondary drivers by gender

Gender	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
Male	33%	29%	38%	29%	24%	48%
Female	50%	15%	35%	27%	27%	46%
Total	43%	21%	36%	28%	26%	47%

Overall, females were half as likely to pick social factors as primary drivers in comparison to their male counterparts. The relative importance of professional factors for both male and females was similar (38% and 35%, respectively).

When it came to secondary drivers, professional factors were the most popular for both genders (48% male and 46% female), with personal and social factors making up the rest with marginal differences.

Finding 57: Females were more likely to name personal factors as responsible for choice of specialty, whilst males were more likely to name professional factors as the driver for choice of specialty.

Finding 58: A third of both genders were equally likely to pick professional factors as driving choice of specialty.

Finding 59: Females gave preference to personal factors over social factors as a primary driver for choice of specialty, with male participants allocating similar importance to personal and social factors.

6.2.5.2 *Primary and secondary drivers according to key age groups*

The primary and secondary drivers as mentioned by the different age groups are outlined in percentages in table 6.26. In understanding the data with reference to the participants' age, some interesting trends were noted. The youngest participants (under 24) overwhelmingly (71 %) cited professional factors as the primary driver for choice of specialty, and personal factors (71%) as the secondary driver. Those participants in the 25–30 age group had this trend reversed and cited personal factors (69%) as being primary drivers for choice of specialty, and professional factors (56%) as secondary drivers.

Table 6.26 Primary and secondary drivers across the key age groups

	Primary Driver			Secondary Driver		
Age Group	Personal	Social	Professional	Personal	Social	Professional
17–24	14%	14%	71%	71%	14%	14%
25– 30	69%	13%	19%	6%	38%	56%
31–35	17%	33%	50%	50%	17%	33%
36–40	63%	13%	25%	13%	13%	75%
41–50	25%	50%	25%	0%	50%	50%
Total	43%	21%	36%	28%	26%	47%

A majority (50%) of those in the 31–35 age group cited professional factors, while the next older age group (36–40) flagged personal factors (63%) as primary drivers influencing choice of specialty. The oldest participants, on the other hand, noted social factors as key drivers, and allocated similar importance to personal and professional factors. Overall, personal and professional factors remained the dominant influencers.

Finding 60: The youngest participants (17–24) were the most likely to cite professional factors as the primary driver of choice of specialty, whilst those in the next older age group (25–30) were most likely to cite personal factors as the primary driver of choice of specialty.

Finding 61: The oldest participants (41–50) were more likely to note social factors as primary drivers than any of the younger groups.

Finding 62: Personal and professional factors remained dominant primary and secondary drivers for all participants. However, the importance of one versus the other transferred based on age.

6.2.5.3 *Primary and secondary drivers by stage of training*

Table 6.27 outlines the primary and secondary drivers of choice according to stage of training. On close analysis, it is apparent that stage of training had a noticeable impact on primary and secondary drivers of career choices, as cited by participants in this study. Participants in the early stages of their career, such as medical students and prevocational doctors, strongly noted personal factors (50%) as primary drivers. Medical students also strongly favoured professional factors (43%), whereas, a quarter of the prevocational doctors found both social and professional factors important. The trend started to change gradually, as GP registrars noted personal factors (38%) only slightly ahead of professional factors (31%) as primary drivers. Practising GPs, on the other hand, mentioned professional factors (42%) as the primary driver, followed by personal factors (33%). Medical students mentioned

professional factors more frequently. Notably this was 50% more than by prevocational doctors.

Table 6.27 Primary and secondary drivers by stage of training

Stage of Training	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
Medical Students	50%	7%	43%	14%	36%	50%
Prevocational Doctors	50%	25%	25%	38%	0%	63%
GP Registrars	38%	31%	31%	31%	38%	31%
Practising GPs	33%	25%	42%	33%	17%	50%
Total	43%	21%	36%	28%	26%	47%

However, in looking at secondary drivers for career choice, professional factors were rated consistently high by most cohorts, i.e. medical students (50%), prevocational doctors (63%) and practising GPs (50%), with the exception of GP registrars, who rated all factors similarly, with a slightly higher emphasis on social factors (38%).

Finding 63: Half of the medical students rated personal factors as the primary driver of career choice, closely followed by professional factors.

Finding 64: Half of the prevocational doctors rated personal factors as a primary driver of career choice, with the remainder split across social and professional factors.

Finding 65: GP Registrars equally rated personal, professional and social factors as primary drivers influencing choice of specialty, with more favouring personal factors.

Finding 66: Practising GPs were more likely to rate professional factors as the primary driver, followed by personal factors and social factors, respectively.

6.2.5.4 *Primary and secondary drivers by area grew up in*

There were some notable differences across primary factors influencing choice of specialty based on participants' origin, as outlined in table 6.28. Rural participants were most likely to state professional factors (50%) as the primary driver of choice, with regional candidates strongly supporting personal factors (80%). Participants who grew up in urban and outer-metro settings rated both personal (41%) and professional factors (38%) almost equally. These percentages are presented in table 6.28.

Table 6.28 Primary and secondary drivers by area grew up in

Area Grew Up In	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
Rural	30%	20%	50%	20%	30%	50%
Regional	80%	20%	0%	20%	20%	60%
Urban & Outer Metro	41%	22%	38%	31%	25%	44%
Total	43%	21%	36%	28%	26%	47%

A fifth of the participants rated social factors (20%) as being the primary driver regardless of where they grew up. Professional factors were found to be the most important secondary driver of choice of specialty for rural (50%), regional (60%) and urban (44%) participants.

Finding 67: Half of the participants from a rural origin rated professional factors as primary driver of choice of specialty, followed by personal and social factors.

Finding 68: Participants from a regional origin were most likely to cite personal factors as the primary driver of choice of specialty.

Finding 69: Participants who grew up in urban and outer-metro settings were equally likely to cite personal and professional factors as the primary driver of choice of specialty.

Finding 70: A fifth of all participants, regardless of origin, chose social factors as the primary driver of choice of specialty.

Finding 71: All participants rated professional factors as a high secondary factor determining choice of specialty.

6.2.5.5 *Primary and secondary drivers by graduate status of university program*

The percentage of drivers mentioned by the participants when categorised as either undergraduates or postgraduates are outlined in table 6.29. There were some notable differences across primary factors influencing choice of specialty based on graduate status of university program. Participants from undergraduate programs were most likely to quote professional factors (48%) as the primary driver, whereas, participants from postgraduate programs were most likely to quote personal factors (54%) as the primary driver of choice of specialty.

Table 6.29 Primary and secondary drivers by graduate status of university program

University Program	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
Undergraduate	30%	28%	48%	39%	44%	30%
Postgraduate	54%	26%	25%	17%	26%	63%
Total	43%	27%	36%	28%	34%	47%

Participants from undergraduate programs were most likely to quote social factors (44%) as the secondary driver and those from postgraduate courses were most likely to quote professional factors (63%) as the secondary driver impacting choice of specialty.

Finding 72: Participants from undergraduate programs were most likely to cite professional factors as the primary driver, and social factors as the secondary driver influencing choice of specialty.

Finding 73: Participants from postgraduate programs were most likely to cite personal factors as the primary driver, and professional factors as the secondary driver influencing choice of specialty.

6.2.5.6 *Primary and secondary drivers by childhood exposure to general practice and to medicine*

Table 6.3 depicts responses of the participants when categorised according to whether they had childhood exposure to general practice.

Table 6.30 Primary and secondary drivers by childhood exposure to general practice

Exposure to GP	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
No exposure	42%	21%	38%	29%	25%	46%
Minor exposure	46%	15%	38%	23%	38%	38%
Substantial exposure	40%	30%	30%	30%	10%	60%
Total	43%	21%	36%	28%	26%	47%

There were no major differences amongst participants who had no exposure, substantial exposure or minor exposure to general practice in relation to their primary drivers of choice of specialty. However, participants with substantial exposure to general practice were more likely to cite professional factors (60%) as a secondary driver, and least likely to cite social factors (10%) as a secondary driver of choice of specialty.

Finding 74: There were no major differences in primary factors impacting choice of specialty between participants who had no childhood exposure to general practice and those who had varied levels of childhood exposure to general practice.

Finding 75: Participants with substantial childhood exposure to general practice were the most likely to cite professional factors as a secondary factor influencing choice of specialty.

Table 6.31 portrays the responses of the participants when their degree of childhood exposure to other forms of medical practice was considered.

Table 6.31 Primary and secondary drivers by childhood exposure to medicine (not general practice)

Exposure to Medicine	Primary Driver			Secondary Driver		
	Personal	Social	Professional	Personal	Social	Professional
No exposure	33%	13%	53%	47%	13%	40%
Minor exposure	55%	18%	27%	18%	36%	45%
Substantial exposure	40%	30%	30%	20%	25%	55%
Total	41%	22%	37%	28%	24%	48%

Participants who had no exposure to medicine were most likely to note professional factors (53%) as the primary driver, and personal factors (47%) as the secondary driver of choice of specialty. Participants with substantial and minor exposure to medicine were both more likely to rate personal factors as the primary driver, and professional factors as the secondary driver of choice of specialty.

Finding 76: Participants who had no childhood exposure to medicine were most likely to note professional factors as the primary driver, and personal factors as the secondary driver of choice of specialty.

Finding 77: Participants with childhood exposure to medicine were most likely to rate personal factors as the primary driver, and professional factors as the secondary driver of choice of specialty.

6.3 Chapter Summary

This chapter has provided a detailed description of the findings from this research study. As part of the research, over 50 individual queries were conducted, and the results from these are tabulated and explained in detail. In detailing the findings in this chapter, the essence of the information obtained from each query was captured into “findings”. These findings are captured in table 6.32 and form the quintessence of this research study. The next chapter analyses the findings in detail and provides a detailed discussion to better understand the range of personal, social and professional factors that influence choice of specialty for medical students, prevocational doctors, GP registrars and practising GPs.

Table 6.32 Findings from study

	Findings
1	Both male and female participants valued flexibility and work-life balance as the most important factors, with female participants giving this a higher priority.
2	Length of training was a more important consideration for females as compared to males in general, but the effects were less noticeable for younger people.
3	Money was not a decision influencer for either male or female participants. However, males were more likely to refer to it as a hygiene factor, and females were more likely to indicate that it did not have any influence at all.
4	Personality had some impact on the decision process, regardless of gender.
5	All participants valued flexibility and work-life balance as the most important factors, with participants aged 25–35 giving it the most importance.
6	Length of training was a more important consideration for participants aged 31–40, followed by participants aged 17–30, with participants over 40 not giving it too much importance.
7	Money was not a decision influencer regardless of age, although participants aged 31–40 were more likely to have given it more thought.
8	Personality had some impact on the decision process regardless of age.
9	All cohorts, regardless of career stage, valued flexibility and work-life balance as the most important factor in relation to picking general practice.
10	The emerging workforce (medical students and prevocational doctors) was very aware of personal preferences in relation to work, and would strive to find a balance more than others.
11	Money was not a decision influencer regardless of career stage. However, any reduction in future remuneration has the potential to impact on workforce retention amongst older GPs.
12	Doctors from an urban background gave greater importance to issues related to flexibility and work-life balance when choosing their specialty.
13	Money was not an influencer in choice of specialty regardless of rural, regional or urban origin.
14	Personality had a similar impact on choice of specialty regardless of rural, regional or urban origin.
15	Postgraduate entrants into medical school gave greater importance to issues related to work-life balance, flexibility and length of training when choosing their specialty as compared to undergraduate entrants.
16	Postgraduate entrants into medicine gave issues related to remuneration greater

	consideration whilst choosing their specialty. However, this was still not a key driver in making their decision.
17	**No evidence was found of early exposure to medicine or general practice having any impact on participants' value on key personal factors that impact choice of specialty.**
18	**Both male and female participants acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.**
19	**Peer interaction did not have any impact on the decision to choose specialty for both male and female participants.**
20	**The hospital training environment had a negative impact and encouraged both male and female participants to consider non-hospital careers, with this being more prevalent with females.**
21	**Both male and female participants were aware that the various specialties in medicine had different levels of prestige associated with them, and that general practice was regarded poorly. However, this did not make any impact on their choice of specialty.**
22	**All age groups acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.**
23	**Peer interaction did not have any impact on any of the participants regardless of age in choosing a specialty.**
24	**The hospital training environment generally had a negative impact across the age groups, and encouraged all participants to consider non-hospital careers.**
25	**All participants, regardless of age, acknowledged the issue of prestige associated with different specialties, but noted that this did not impact on choice of specialty.**
26	**All cohorts indicated the importance of GP rotations and role models regardless of career stage.**
27	**All cohorts were dissatisfied with their hospital terms and indicated that this was a contributing factor to specialty choice.**
28	**Issues related to the prestige and influence of peers did not affect the decision process for all cohorts.**
29	**All participants were influenced by the impact of GP rotations and academic and clinical role models. However, participants with an urban origin tended to give greater importance to these issues.**
30	**All cohorts were dissatisfied with their hospital terms, and indicated that this was a contributing factor to their choice of specialty.**
31	**Issues related to prestige and influence of peers did not affect the decision process for all cohorts regardless of origin.**
32	**Both undergraduate and postgraduate entrants had similar influencers in relation to**

	key social factors. These included exposure to GP rotations, influence of clinical and academic role models and the hospital system environment.
33	**Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by social factors as participants who did.**
34	**Participants whose parents were in medicine had a greater, subconscious, understanding of careers in medicine and were likely to be influenced by that.**
35	**Participants of both genders noted connection with patients, scope of practice and professional autonomy aspects of general practice as key influencers.**
36	**Females were more vocal about the importance of the key professional factors than their male counterparts.**
37	**Procedural aspects of medicine and a holistic approach to patient care were secondary professional factors that were noted as important.**
38	**Importance of professional factors was consistent across all age groups, with all cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.**
39	**There were no distinctions in relation to the relative importance of various professional factors on the basis of age differences.**
40	**Connection with patients remained a key factor and was consistent for all cohorts. Prevocational doctors valued this factor over all other professional factors.**
41	**Practising GPs valued variety and scope of practice more than any other cohort.**
42	**Cohorts in later stages of their career (GP registrars and practising GPs) valued professional autonomy more than others.**
43	**Professional factors were more prominent for individuals who had grown up in an urban setting.**
44	**Connection with patients, variety and scope of practice, and professional autonomy remained the most important factors influencing choice of specialty regardless of origin.**
45	**There were no notable differences in relation to professional factors amongst undergraduate and postgraduate entrants, with both cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.**
46	**Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by professional factors as participants who did.**
47	**There were no noticeable distinctions in the influence of professional factors based on early exposure or non-exposure to medicine or general practice.**
48	**Practical opportunities were a factor that affected some participants' decision to choose a particular specialty, and this was equally important for male and female**

	participants.
49	**Females were more likely to be affected by the timing of key life events, and this was more likely to influence their choice of specialty, as compared to their male counterparts.**
50	**Practical opportunities and timing were key factors that were important across all age groups.**
51	**Those in the 25–30 and 31–35 age groups were more likely to be influenced by issues related to timing in comparison to those in the 17–24 age group. The 36–50 age group was the least influenced by this across the cohort.**
52	**Practical opportunities were an important factor that affected some participants' decision to choose a particular specialty, and this was particularly important for prevocational doctors.**
53	**The impact of the timing of key life events was an important factor that influenced choice of specialty regardless of the stage of training.**
54	**Practical opportunities and timing were important factors that affected participants from an urban background.**
55	**Both undergraduate and postgraduate participants noted the importance of practical opportunities and timing in picking choice of specialty, with timing being a key factor for postgraduate participants.**
56	**Participants with early exposure to medicine were more likely to reference practical opportunities and timing as key factors that influenced choice of specialty.**
57	**Females were more likely to name personal factors as responsible for choice of specialty, whilst males were more likely to name professional factors as the driver for choice of specialty.**
58	**A third of both genders were equally likely to pick professional factors as driving choice of specialty.**
59	**Females gave preference to personal factors over social factors as a primary driver for choice of specialty, with male participants allocating similar importance to personal and social factors.**
60	**The youngest participants (17–24) were the most likely to cite professional factors as the primary driver of choice of specialty, whilst those in the next older age group (25–30) were most likely to cite personal factors as the primary driver of choice of specialty.**
61	**The oldest participants (41–50) were more likely to note social factors as primary drivers than any of the younger groups.**
62	**Personal and professional factors remained dominant primary and secondary drivers for participants. However, the importance of one versus the other transferred based on**

	age.
63	**Half of the medical students rated personal factors as a primary driver of career choice, closely followed by professional factors.**
64	**Half of the prevocational doctors rated personal factors as a primary driver of career choice, with the remainder split across social and professional factors.**
65	**GP Registrars equally rated personal, professional and social factors as primary drivers influencing choice of specialty, with more favouring personal factors.**
66	**Practising GPs were more likely to rate professional factors as the primary driver, followed by personal factors and social factors, respectively.**
67	**Half of the participants from a rural origin rated professional factors as the primary driver of choice of specialty, followed by personal and social factors.**
68	**Participants from a regional origin were most likely to cite personal factors as the primary driver of choice of specialty.**
69	**Participants who grew up in urban and outer-metro settings were equally likely to cite personal and professional factors as the primary driver of choice of specialty.**
70	**A fifth of all participants, regardless of origin, chose social factors as the primary driver of choice of specialty.**
71	**All participants rated professional factors as a high secondary factor determining choice of specialty.**
72	**Participants from undergraduate programs were most likely to cite professional factors as the primary driver and social factors as the secondary driver influencing choice of specialty**
73	**Participants from postgraduate programs were most likely to cite personal factors as the primary driver and professional factors as the secondary driver influencing choice of specialty.**
74	**There were no major differences in primary factors impacting choice of specialty between participants who had no childhood exposure to general practice and those who had varied levels of childhood exposure to general practice.**
75	**Participants with substantial childhood exposure to general practice were the most likely to cite professional factors as a secondary factor influencing choice of specialty.**
76	**Participants who had no childhood exposure to medicine were most likely to note professional factors as the primary driver, and personal factors as the secondary driver of choice of specialty.**
77	**Participants with childhood exposure to medicine were most likely to rate personal factors as the primary driver, and professional factors as the secondary driver of choice of specialty.**

7 Discussion and Interpretations

7.1 Chapter Overview

This chapter includes a detailed discussion and interpretation of the findings outlined in chapter 6 and links them to the current literature. In this chapter, particular new findings that have resulted from this study are highlighted, and gaps that require further research are identified. Section 7.3 introduces a new findings matrix to aid in understanding the findings from chapter 6 within the context of the research. This is followed, in sections 7.3.1-7.3.4, by an interpretation of the findings, with a reference to the literature that underpins the research. As part of this process, a secondary literature review is included in the discussion to link the findings to current literature on this topic. Section 7.4 provides a detailed discussion of the primary and secondary factors impacting on choice of specialty as outlined by the participants during the study. In this section, an analysis of this choice within the context of gender, age, origin, career stage, graduate status and early exposure to medicine is provided. Section 7.5 concludes the chapter with a brief summary.

7.2 Secondary Literature Review

This study included the use of an iterative approach, which required constant review of the literature as the study progressed. Issues that were flagged during the data collection and analysis stage were explored along with the relevant literature. This literature has been included in the consolidated list of articles found in Appendix 1. As such, a detailed secondary literature review was not required. However, once the findings were outlined, as per table 6.32 in chapter 6, a final review of the literature was conducted to determine if the current findings were supported in the literature. This also enabled new areas to be highlighted. To enable this process, the the findings had to be restructured so that they could be understood and examined within the context of this study, rather than as 77 individual disconnected findings. This synthesis is detailed in the following section.

7.3 Understanding the Findings

In analysing the data, a rich set of findings was obtained, as outlined in chapter 6. These findings were summarised in broad sections related to personal factors, social factors, professional factors and life events, and were examined through a range of different lenses such as gender, age, origin, stage of training, career stage and past exposure to medicine. The resultant data were summarised into 77 findings, as outlined in chapter 6 table 6.32. Whilst the findings offer a wide set of learnings about the key factors that influence choice of specialty , they need to be examined within the context of the individual and other environmental factors to understand the overall decision process. Theorists have suggested that decision-making is a complex process driven by individual preferences and beliefs (Kahneman and Tversky 1984) and individual experiences (Einhorn and Hogarth 1981). In chapter 2 (figure 2.1), the a transactional process model (as adapted from Chang 2000) was outlined to describe the decision-making process for doctors choosing a specialty, which included the decision maker, decision task and the environment. This model is now used to assist in understanding and interpreting the findings of the study. A visual representation of these findings as generated from the QSR QSR NVIVO® software is available in Appendix 9 and provides a broad overview of what was important based on the number of coding references.

To enable the reader to understand the findings within the context of the individual and other related factors, it was important to first visualise the findings in a way that allowed the reader to see these connections. This led to the creation of the findings matrix as per table 7.1, which provides a unique perspective into interpreting the findings.

Matrix Colour Codes

Differential Influence i.e participants had varied experiences	No Influence i.e no participants were impacted by this	Common Influence i.e all participants were impacted by this

Table 7.1 Findings Matrix

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Gender	Both male and female participants valued flexibility and work-life balance as the most important factors, with female participants giving this a higher priority.	Both male and female participants acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.	Participants of both genders noted connection with patients, scope of practice and professional autonomy aspects of general practice as key influencers.	Practical opportunities were a factor that affected some participants' decision to choose a particular specialty, and this was equally important for male and female participants.	Females were more likely to name personal factors as responsible for choice of specialty, whilst males were more likely to name professional factors as the driver for choice of specialty.
	Length of training was a more important consideration for females as compared to males in general, but the effects were less noticeable for younger people.	Peer interaction did not have any impact on the decision to choose specialty for both male and female participants.	Females were more vocal about the importance of the key professional factors than their male counterparts.	Females were more likely to be affected by the timing of key life events, and this was more likely to influence their choice of specialty, as compared to their male counterparts.	A third of both genders were equally likely to pick professional factors as driving choice of specialty.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
	Money was not a decision influencer for either male or female participants. However, males were more likely to refer to it as a hygiene factor, and females were more likely to indicate that it did not have any influence at all.	The hospital training environment had a negative impact and encouraged both male and female participants to consider non-hospital careers, with this being more prevalent with females.	Procedural aspects of medicine and a holistic approach to patient care were secondary professional factors that were noted as important for both genders.		Females gave preference to personal factors over social factors as a primary driver for choice of specialty, with male participants allocating similar importance to personal and social factors.
	Personality had some impact on the decision process, regardless of gender.	Both male and female participants were aware that the various specialties in medicine had different levels of prestige associated with them, and that general practice was regarded poorly. However, this did not make any impact on their choice of specialty.			

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Age	All participants valued flexibility and work-life balance as the most important factors, with participants aged 25-35 giving it the most importance.	All age groups acknowledged the impact of clinical and academic role models as major influencers in choosing their specialty.	Importance of professional factors was consistent across all age groups, with all cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.	Practical opportunities and timing were key factors that were important across all age groups.	The youngest participants (17-24) were the most likely to cite professional factors as the primary driver of choice of specialty, whilst those in the next older age group (25-30) were most likely to cite personal factors as the primary driver of choice of specialty.
	Length of training was a more important consideration for participants aged 31-40, followed by participants aged 17-30, with participants over 40 not giving it too much	Peer interaction did not have any impact on any of the participants regardless of age in choosing a specialty.	There were no distinctions in relation to the relative importance of various professional factors on the basis of age differences.	Those in the 25-30 and 31-35 age groups were more likely to be influenced by issues related to timing in comparison to those in the 17-24 age group. The 36-50 age group was the least influenced by this across	The oldest participants (41-50) were more likely to note social factors as primary drivers than any of the younger groups.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
	importance.			the cohort.	
	Money was not a decision influencer regardless of age, although participants aged 31-40 were more likely to have given it more thought.	The hospital training environment generally had a negative impact across the age groups, and encouraged all participants to consider non-hospital careers.	Connection with patients remained a key factor and was consistent for all cohorts. Prevocational doctors valued this factor over all other professional factors.		Personal and professional factors remained dominant primary and secondary drivers for participants. However, the importance of one versus the other transferred based on age.
	Personality had some impact on the decision process regardless of age.	All participants, regardless of age, acknowledged the issue of prestige associated with different specialties, but noted that this did not impact on choice of specialty.			

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Career Stage	All cohorts, regardless of career stage, valued flexibility and work-life balance as the most important factor in relation to picking general practice.	All cohorts indicated the importance of GP rotations and role models regardless of career stage.	Practising GPs valued variety and scope of practice more than any other cohort.	Practical opportunities were an important factor that affected some participants' decision to choose a particular specialty, and this was particularly important for prevocational doctors.	Half of the medical students rated personal factors as a primary driver of career choice, closely followed by professional factors.
	The emerging workforce (medical students and prevocational doctors) was very aware of personal preferences in relation to work, and would strive to find a balance more than others.	All cohorts were dissatisfied with their hospital terms and indicated that this was a contributing factor to specialty choice.	Cohorts in later stages of their career (GP registrars and practising GPs) valued professional autonomy more than others.	The impact of the timing of key life events was an important factor that influenced choice of specialty regardless of the stage of training.	Half of the prevocational doctors rated personal factors as a primary driver of career choice, with the remainder split across social and professional factors.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
	Money was not a decision influencer regardless of career stage. However, any reduction in future remuneration has the potential to impact on workforce retention amongst older GPs.	Issues related to the prestige and influence of peers did not affect the decision process for all cohorts.			GP Registrars equally rated personal, professional and social factors as primary drivers influencing choice of specialty, with more favouring personal factors.
					Practising GPs were more likely to rate professional factors as the primary driver, followed by personal factors and social factors, respectively.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Origin	Doctors from an urban background gave greater importance to issues related to flexibility and work-life balance when choosing their specialty.	All participants were influenced by the impact of GP rotations and academic and clinical role models. However, participants with an urban origin tended to give greater importance to these issues.	Professional factors were more prominent for individuals who had grown up in an urban setting.	Practical opportunities and timing were important factors that affected participants from an urban background.	Half of the participants from a rural origin rated professional factors as the primary driver of choice of specialty, followed by personal and social factors.
	Money was not an influencer in choice of specialty regardless of rural, regional or urban origin.	All cohorts were dissatisfied with their hospital terms, and indicated that this was a contributing factor to their choice of specialty.	Connection with patients, variety and scope of practice, and professional autonomy remained the most important factors influencing choice of specialty regardless of origin.		Participants from a regional origin were most likely to cite personal factors as the primary driver of choice of specialty.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
	Personality had a similar impact on choice of specialty regardless of rural, regional or urban origin.	Issues related to prestige and influence of peers did not affect the decision process for all cohorts regardless of origin.			Participants who grew up in urban and outer-metro settings were equally likely to cite personal and professional factors as the primary driver of choice of specialty.
					A fifth of all participants, regardless of origin, chose social factors as the primary driver of choice of specialty.
					All participants rated professional factors as a high secondary factor determining choice of specialty regardless of origin.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Graduate Status	Postgraduate entrants into medical school gave greater importance to issues related to work-life balance, flexibility and length of training when choosing their specialty as compared to undergraduate entrants.	Both undergraduate and postgraduate entrants had similar influencers in relation to key social factors. These included exposure to GP rotations, influence of clinical and academic role models and the hospital system environment.	There were no notable differences in relation to professional factors amongst undergraduate and postgraduate entrants, with both cohorts valuing connection with patients, variety and scope of practice, and professional autonomy.	Both undergraduate and postgraduate participants noted the importance of practical opportunities and timing in picking choice of specialty, with timing being a key factor for postgraduate participants.	Participants from undergraduate programs were most likely to cite professional factors as the primary driver and social factors as the secondary driver influencing choice of specialty
	Postgraduate entrants into medicine gave issues related to remuneration greater consideration whilst choosing their specialty. However, this was still not a key driver in making their decision.	Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by social factors as participants who did.			Participants from postgraduate programs were most likely to cite personal factors as the primary driver and professional factors as the secondary driver influencing choice of specialty.

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
Childhood Exposure to Medicine / GP	No evidence of early exposure to medicine or general practice was found having any impact on participants' value on key personal factors that impact choice of specialty.	Participants whose parents were in medicine had a greater, subconscious, understanding of careers in medicine and were likely to be influenced by that.	Participants who did not have childhood exposure to medicine or GP were just as likely to be impacted by professional factors as participants who did.	Participants with early exposure to medicine were more likely to reference practical opportunities and timing as key factors that influenced choice of specialty.	There were no major differences in primary factors impacting choice of specialty between participants who had no childhood exposure to general practice and those who had varied levels of childhood exposure to general practice.
			There were no noticeable distinctions in the influence of professional factors based on early exposure or non-exposure to medicine or general practice.		Participants with substantial childhood exposure to general practice were the most likely to cite professional factors as a secondary factor influencing choice of specialty.
					Participants who had no childhood exposure to medicine were most likely to

	Personal Factors	Social Factors	Professional Factors	Life Events	Primary / Secondary Drivers
					note professional factors as the primary driver, and personal factors as the secondary driver of choice of specialty.
					Participants with childhood exposure to medicine were most likely to rate personal factors as the primary driver, and professional factors as the secondary driver of choice of specialty.

Matrix Colour Codes

Differential Influence i.e participants had varied experiences	No Influence i.e no participants were impacted by this	Common Influence i.e all participants were impacted by this

This matrix allows the reader to contextualise the findings in order to understand the various factors that impact on choice of specialty within the context of the individual (i.e. gender, age, origin, etc.) to see the linkages with their environment (social factors such as lived experiences, influence of others and life events such as practical opportunities and timing) and with the decision task itself (professional factors such as situational context, comparing alternatives and personal factors such as lifestyle & flexibility which impacts on the decision maker).

The secondary literature review is discussed within the context of the research in the following sections to acknowledge areas where the current study supports existing literature whilst highlighting new findings and areas for future research. A broad discussion and interpretation of the findings is also included.

7.3.1 Personal factors

The analysis of the personal factors demonstrates that flexibility and work-life balance were the key drivers for most individuals. This is consistent with broad literature on the topic, in which a number of key authors (Thistlewaite et al. 2008; Watmough, Taylor, and Ryland 2007; Watson et al. 2011) have highlighted these as important factors in determining choice. Under this broad umbrella of flexibility and work-life balance, the dominant theme that has been explored is compatibility with family considerations (Watson et al. 2011; Kiolbassa, Miksch, and Goetz 2011) as the ultimate driver. An emerging factor that was identified as part of this study was length of training, and participants noted that shorter training times were attractive. This was particularly true for older participants, with their younger counterparts less concerned about longer training times. A key finding was that money was not an influencer; this is a particularly important finding within the context of the Australian government's workforce initiatives, which targeted financial incentives as a primary way to influence choice of specialty. The current study confirms that this is in fact a misdirection of resources, and has implications for future policy. The following sections discuss these findings within the context of various participant attributes in more detail.

7.3.1.1 *Personal choice context*

Within the Australian context, medical students have noted that flexibility of training and working hours are two of the main factors that influence career choices (Thistlethwaite et al. 2008). Whilst this was found to be true across the current study, a related factor that emerged within the Australian context, and which is not well evidenced in the literature, was length of training. It was found that at certain times within an individual's context this can be a key influencer, and it is worth noting for determining policy and marketing levers when promoting various specialties to aspiring doctors. Whilst one could argue that this is linked to work-life balance to some extent, as the underlying drivers are similar, it is important to note that this can be a substantial influencer for certain individuals based on their "situational context". It was found that the older participants, or those who had changed vocations, were most likely to be impacted by this factor since it had implications for their broader personal and social commitments.

Another noteworthy finding of this research was the relationship of medical specialty career choices to remuneration. Income is commonly linked to career choices (Tang, Kim, and Tang 2000; Morra, Regehr, and Ginsburg 2009; Tang 1995) across many settings. Within medicine, particular studies have linked student debt to specialty intentions (Moore et al. 2006) and to the high cost of obtaining medical degrees (Grayson, Newton, and Thompson 2013; Moore et al. 2006; Rosenblatt and Andrilla 2005; Rosenthal, Marquette, and Diamond 1996; Dwyer, McCloud, and Hodgson 2012). Even within the Australian context, it has been suggested that general practice would be a more popular career choice if the remuneration was more in line with that of other specialties (Thistlethwaite et al. 2008; Newton, Grayson, and Thompson 2005). However this research demonstrated, without doubt, that remuneration was in fact a very low influencer; none of the participants cited it as a key driver when seen within the context of the other drivers. Of all the participants in this study, who represented medical students, pre-vocational doctors, GP registrars and practising GPs, the overwhelming majority gave little or no importance to money within the range of factors driving their career choice. This

is noteworthy, especially in the context of the range of policy levers that have been designed by a number of commonwealth medical workforce initiatives that use financial incentives as a key driver, whilst ignoring the other drivers that have greater impact on the decision process. There were only three participants in the whole group who acknowledged that money was an influencer in their decision process, while all others acknowledged it as nothing more than a hygiene factor. Interestingly, even those who noted it as an important consideration acknowledged that their ultimate choice was driven within the context of the range of other factors, and remuneration did not make the final list of primary or secondary drivers ultimately responsible for their decision.

This suggests that this is easily explained, as some of the other researchers have focussed solely on the importance of money as an isolated variable in the context of the decision-making process, rather than a "cog in the wheel" of a complex phenomenon. It was noted that broader Generation Y research on the issue of remuneration outlines that, while money is an important factor, it needs to be related to meaningful and fulfilling work (Lancaster and Stillman 2002). It can therefore be argued that it is not unreasonable to expect individuals to acknowledge the importance of money if asked a direct question in relation to changing remuneration systems (Abelsen and Olsen 2012), or when demonstrating a hypothetical increase, for instance, in junior doctors choosing general practice as a specialty by increasing remuneration by $50,000 (Siveya et al. 2012). However, these scenarios disregard the complex nature of the decision process leading to the choice of a medical specialty, something that has been well argued by others (General Practice Education & Training 2007). This study confirms that remuneration is broadly seen as not as important within the context of other factors. However, it also acknowledges that there is some merit in the general importance of a "fair remuneration", and there is scope for some sensitivity analysis of the importance of remuneration in comparison to other factors to determine under what particular conditions this can become a dominant variable.

The other key learning from this research was that there are subtle differences across the various personal factors that influence choice of specialty when viewed through the particular lens of individual and situational differences based on gender, age, origin, stage of training, etc. These are discussed in some detail below.

7.3.1.2 *Demographic context*

Many previous studies have looked at the impact of a range of demographic factors such as gender, age and graduate status on the career choice preference of doctors. Studies from New Zealand (Lawrence, Poole, and Diener 2003), the UK (Heiligers 2012; Heiligers and Hingstman 2000; Wakeford and Warren 1989) and the USA (Levine et al. 2013) have explored the role of gender and argued that it does play a role; women are more likely than men to select general practice. At the same time, other researchers have found that gender does not have an impact, with both genders likely to choose similar specialties (Maiorova et al. 2008; Diderichsen et al. 2013).

This study examined the impact of gender from a few different perspectives. It noted that both male and female participants valued flexibility and work life-balance, which was found to be a key driver impacting choice of specialty, with female participants giving it more importance. Similarly, females also placed higher value on length of training as compared to their male counterparts. This suggests that this can be attributed to biological drivers in relation to child rearing, an idea that is supported in the literature (Lawrence, Poole, and Diener 2003; Gjerberg 2002). This research confirms that whilst gender can act as an influencer, it was not found to be a dominant variable impacting on choice of specialty.

The age of participants provides a unique perspective in evaluating the influence of key drivers. It was noted that issues such as flexibility and work-life balance were most dominant with the participants aged 25-35. This is an important finding from a policy perspective since a number of career choices are naturally made during this time frame. Careers that offer flexibility and work-life balance are likely to be more attractive for this group of individuals and can be a key factor influencing choice of

specialty. Similarly, participants aged 31-40 (if they were still in training) were more concerned about the length of training across specialties. This is understandable given that they are further along in their life journey and, hence, do not want to spend a long time in a training environment and want to practice independently. This confirms earlier findings (Senf, Campos-Outcalt, and Kutob 2003; Schwartz et al. 2005; Hojat et al. 1995) that age can influence choice of specialty. This has a particular impact on students who are older when they enter medicine and are more likely to pick careers where the training time is shorter.

So, similar to other factors, it becomes apparent that certain factors, such as age, can have a varying degree of influence on the decision, and this is underpinned by where individuals are in the broader context of their personal and professional journey. This is of particular importance in the Australian context since there are no local studies linking age to choice of specialty. This is a key point for policy makers to consider if they want to ensure that the right strategies are targeted to the right groups for the purpose of influencing choice of specialty.

With over 81% of medical students commencing their medical degree before they have turned 25, it is important to acknowledge that a change in this demographic profile can have an impact on career choices. With a gradual move towards post-graduate entry across Australian medical schools, this particular attribute can have a greater impact on career choices across emerging medical graduates, who will be older and, hence, be more influenced by issues such as flexibility, work-life balance and length of training. In 2013, over 45% (Health 2014) of medical students entering medical school were undertaking a postgraduate course, as opposed to 36% in 2009 (Australian Government Department of Health and Ageing 2011).

As such this study indicates that future cohorts are more likely to pick general practice, as it currently offers more flexibility, is shorter and has better work-life balance. Whilst emphasising these aspects of this specialty is a good strategy to increase the supply of general practitioners in the community over time, it is also a strategy that can be hard to reverse once these workforce requirements have been

met. To put this in context, from 2001 to 2006, the number of GP training positions ranged between 400—600 new positions per annum, and the GP training program did not fill these positions in any given year. However, in the 2015 training year, there were 1,500 GP training positions, with over 1,950 eligible candidates applying for training. In 2016, this is imbalance is expected to worsen with over a third of GP training applicants expected to miss out on GP training (Hoffman 2015b). If in the future, GP workforce shortages are reversed and medical schools remain predominantly postgraduate entry, it is likely to create an oversupply of graduates seeking GP careers, which can destabilise the workforce supply-demand continuum, and also risks compounding shortages across other specialties.

In addition to the above, it is important to note that the GP training program in Australia is also restructuring, with control passing back to the Department of Health, and with a consolidation of the number of training providers from 17 to 11. These changes announced by the commonwealth (Australian Government 2014) have the potential to manipulate the key attributes that currently underpin GP training and may have an impact on the choice of future cohorts.

Whilst there are some studies that link choice of specialty to age (Hojat et al. 1995; Kutob, Senf, and Campos-Outcalt 2003; Schwartz et al. 2005), studies related to choice of specialty and graduate status are limited. An earlier UK study did find that postgraduate entrants into medicine were more likely to pick general practice (Lambert et al. 2001), but this has not been explored by other studies, and more specifically, there has been little research conducted within the Australian context.

This particular study confirms that postgraduate entrants into medical schools placed more importance on issues related to work-life balance, flexibility and length of training when choosing their specialty as compared to undergraduate entrants. This is a major finding since it confirms this group's greater propensity to be influenced by these personal factors, which have been noted in this research as key drivers influencing choice of specialty.

7.3.1.3 *Biometric context*

Career choices have often been attributed to biometric factors such as personality (Boyd and Brown 2005; Ciechanowski et al. 2004; Borges et al. 2009), impact of childhood experiences (Naughton 1987; Hertzman 1994) and origin (Armitage and McMaster 2000; Australian Medical Workforce Advisory Committee 2005a; Azer, Simmons, and Elliott 2001; Brooks et al. 2002; Dunbadin and Levitt 2003).

This study was not designed to focus on personality types and their relation to particular medical specialties. This aspect has been well covered and established in the literature, as discussed in section 2.5.3.1.2. However, part of this study confirmed that personality did, in fact, have an impact on choice of specialty, which is in line with prevailing literature. In addition, the it was found that this impact of personality on career choices was not influenced by gender, age, rural versus urban origin, career stage, or any other factor explored in this study. This is an important contribution to literature in this area since it confirms and recognises the importance of personality types predicting choice of specialty as a stand-alone factor. However, it should be remembered that this was not the focus of this research and acknowledged that this would need to be carefully tested in future research.

Previous literature on urban rural origin has largely focussed on linking rural origin with careers in general practice (Poole, Bourk, and Shulruf 2010; Poole et al. 2009; Royston et al. 2012) and rural work intentions (Kamien 2004; Laven and Wilkinson 2003; Norris 2005; Pretorius, Milling, and McGuigan 2008; Somers, Strasser, and Jolly 2007; McDonald, Bibby, and Caroll 2002). In this particular study, the examination of the impact of origin on particular factors demonstrated that participants from an urban background gave more importance to issues related to flexibility and work-life balance when choosing their specialty. This provides a different lens for looking at choice of speciality amongst rural and urban participants, and suggests that urban-centric participants are more influenced

towards careers that provide flexibility and work-life balance and, hence, are likely to consider general practice for these reasons.

This is an interesting finding as it suggests that urban participants are more likely to choose general practice. However, this would be a simplistic view. Many would argue that this contradicts seminal studies (Ward et al. 2004; Pretorius et al. 2008), which have demonstrated that rural origin is a strong predictor of choosing general practice as a medical specialty. This suggests that this finding regarding origin, which has emerged from this research, does not contradict existing literature, but highlights that the reasons behind applicants' choice of general practice are inherently different depending on whether they come from a rural or urban background. Feldman et al. (2003) noted that having a larger sense of community and of "giving-back" to others were important attributes for rural applicants and influenced their choice of specialty. As such, in a policy context, it is more important to focus on building flexibility and work-life balance for urban applicants to influence their choice of specialty, acknowledging that rural applicants would have different drivers.

While a number of studies have established the impact of childhood experiences on work intentions and life choices (Naughton 1987; Hertzman 1994), there remains a paucity of literature testing the impact of these experiences on determining choice of specialty in medicine. Though an attempt was made to investigate this, the data was not conclusive, and no linkages related to childhood exposure to medicine or general practice in relation to influencing choice of specialty within the context of personal factors was found. This suggests that this remains an area requiring further investigation.

7.3.1.4 *Career stage*

One unique aspect of this study is that it considered a wide mix of participants at different stages of their career journey, ranging from medical students to practising GPs. This was an important analysis, and one that has not been replicated in either international or domestic literature as part of a single qualitative study looking at

choice of specialty. The key outcome of this analysis was that all cohorts, regardless of career stage, valued flexibility and work-life balance as the most important personal factor in relation to picking general practice. It was also noted that money was not an influencer, regardless of career stage. This demonstrates that these factors have stood the “test of time” through changes in education and training environments, and indeed the evolution of the profession itself. Therefore, it is argued that these are stable criteria and, hence, they are of key value to current and future policy-making. Any policies that try to leverage these factors as a decision influencer need to be carefully crafted to ensure they are complementary to these findings for them to be effective. Any policy levers that try to focus away from or undermine these “universal truths” will ultimately result in a failure to meet policy expectations.

One key difference noted during this study was that the emerging workforce is more aware of personal preferences and is likely to strive towards finding more balance in its work. This is explained in the context of generational change and is consistent with changing generational values; the emerging generation Y seeks greater flexibility (Martin 2005) and work-life balance (Zemke, Raines, and Filipczak 2000) to achieve professional satisfaction and personal freedom (Sayers 2007). Whilst work–life balance and flexibility are fundamental values to both Generation X and Y, and are an important factor in relation to job choices (Zemke, Raines, and Filipczak 2000; Campbell et al. 2010), Generation Y is likely to give these values more importance, even if doing so impacts career advancement (Terjesen, Vinnicombe, and Freeman 2007). This indicates that the emerging cohorts are going to be more conscious about these factors than their predecessors, and will actively use these factors as decision drivers, as opposed to merely being sub-consciously influenced by them. This will be an important factor influencing choice of specialty for future cohorts, and training pathways and medical specialties will need to address this if they are to attract and retain their workforce. Policy makers will need to clarify how various pathways address this important variable to meet the expectations of the next generation of doctors.

7.3.2 Social factors

The key social factors that were found to influence choice of specialty were impact of role models and preceptorships. This is consistent with existing literature based on a number of international (Rabinowitz 1988; Campos-Outcalt et al. 1995; Lynch and Willis 2000; McKee et al. 2007) and domestic studies (Stagg, Greenhill, and Worley 2009; Thistlewaite et al. 2008) which have highlighted these as important factors. A major factor that emerged, and which has not been well documented within the Australian context, was the negative impact of the hospital environment; this acted as a key influencer for a range of participants to seek careers outside of the hospital setting. Prestige and peer interaction were found not to have any major impact, even though they have previously been noted as strong influencers. The overall impact of the key social factors is examined in the following sections.

7.3.2.1 *Perceptions*

There is a significant amount of literature that has looked at issues related to prestige and stereotypes across various medical specialties and their impact on career decisions of future cohorts. This concept was explored in some detail with the participants, and it was noted that all participants were acutely aware of the issues related to different levels of prestige associated with various specialties and that general practice was broadly considered as having lower prestige. However, it was found that, when considering this issue, all participants indicated that this negative perception did not, in fact, have any impact on their choice of specialty. On the contrary, some participants went as far as to say that the negative perception around prestige had further emboldened their decision to choose general practice. When testing for various personal attributes, it was found that this remained true, regardless of gender, age, career stage or graduate status.

This is a key finding because it demonstrates that merely having a negative perception related to prestige around a particular specialty is not necessarily a predictor of career choice intention, and there are other factors that are more important. Some researchers who have previously argued that doctors pursuing

general practice had a low interest in prestige (Senf, Campos-Outcalt, and Kutob 2003; Newton, Grayson, and Whitley 1998) would suggest that the current research has selection bias based on this supposition. However, this study supports the argument that this is not true; more than a third of the participants in the current study had not yet determined their choice of specialty, and a few others had changed specialties later in life.

In an Australian study, Creed et al. (2010) noted that prestige and lifestyle preferences are an important issue for current medical students and have a significant impact on future career choices. They suggest that prestige and lifestyle preferences are at opposite ends of a spectrum, with less prestigious careers being seen as offering better lifestyle choices. Whilst this may be true, this study supports the postulation that the emerging cohort's apathy towards prestige as a driver of career choice was not related to other issues, and, hence, was not part of the decision matrix. The broader apathy of the emerging cohorts in relation to prestige is further supported by literature which suggests that generations X and Y do not see the relevance of hierarchy in the workplace (Moore and Hill 2011) and prefer to judge based on merit, rather than status (Conger 1998, 1997). Martin (2005) argues that for a leadership style to be effective in today's workplace, it will need to move away from a hierarchical, position-based influence, to a more knowledge-based influence. Overall, the current literature on prestige acting as an influencer of choice of specialty is weak, and this study confirms that prestige, in fact, does not have an impact on choice of medical specialty within the context of a range of other factors that are seen as being more relevant by the participants.

7.3.2.2 *Lived experiences*

Researchers have long argued that career choice is closely linked to work experiences (Super 1969) and the social context of these experiences (Krumboltz 1976). Preceptorships are an integral part of medicine, and the apprenticeship model of teaching is broadly accepted as a common way to train medical students globally. A number of studies have demonstrated that preceptorships, in general practice, had an impact on students choosing this specialty (Bland, Meurer, and

Maldonado 1995; Rabinowitz 1988; Senf, Campos-Outcalt, and Kutob 2005; Senf and Campos-Outcalt 1995). Researchers have further argued that the duration of preceptorships can be important, with longer duration having a greater impact (Morrison and Murray 1996; Lynch and Willis 2000). The current study broadly confirmed this view, and most participants noted the importance of their clinical rotations as a mechanism of deciding their choice of specialty.

It was noted that a number of participants did not have a clear idea of the specialty that they wanted to work in, and went through a process of elimination based on what they did not want to do as means of determining their final choice. This is best explained by considering Gottfredson's (1981,1996) developmental theory of circumscription and compromise. Gottfredson combines Super's developmental stages (1969) and Holland's person-environment-fit (1973) theories to explain why some individuals make less than congruent choices, arguing that individuals will narrow down their choices in an attempt to express their self-concept in their occupational choice through a process of circumscription or reduction (Gottfredson 1981, 1996). As such, it can be postulated that the "negative experiences" that participants had during their preceptorships were in fact a greater predictor of career choice than the positive experiences. This is illustrated by the fact that most participants, regardless of age, gender, origin, or stage of training, acknowledged the negative impact of the hospital training environment and attributed it as being a key driver in picking non-hospital based careers. Consequently, if policy makers are going to influence choice of specialty, then greater regard needs to be given to addressing issues with poor quality of preceptorships than to anything else in this context. This is also a broader issue that needs to be addressed for hospital-based specialties. If a number of other specialties continue to offer negative experiences, then this has the potential to create a reduced cohort of individuals who pursue that specialty into the future. Whilst this may not be a concern in the short term, it can have future workforce implications.

However, these preceptorships should not be viewed in isolation, as an element of work experience that can be improved, but should be acknowledged as closely

linked to the actual individuals and role models that the participants interacted with during the preceptorship, as discussed in the following section.

7.3.2.3 *External influences*

In medicine, researchers have long argued that role models can have a significant impact on individual career choices (Wright, Wong, and Newill 1997; Bland, Meurer, and Maldonado 1995; Stagg et al. 2012; Ravindra and Fitzgerald 2011). More broadly, researchers have also noted the impact of parents in influencing their children's future career choices (Santos and Coimbra 2000; Young and Friesen 1992). Both these concepts were found to be fully supported in this study, with all participants noting the importance of key role models on their career choice. Whilst preceptorships often formed the vehicle by which this interaction occurred, it was the actual relationships, positive or negative, that influenced participants to choose their specialty. This is explained in literature, especially by Krumboltz (1976), who was the first to argue that the nature of the social context and interaction from work experiences was a key driver of career choice.

All participants identified the importance of role models, and there were no notable differences based on gender, age, origin, career stage or graduate status. One noteworthy exception was that participants whose parents were in medicine had a greater understanding of careers in medicine, and were likely to be influenced by this. These individuals had, in some ways, already experienced some aspects of careers in medicine via early exposure, and were bringing this experience to the decision-making process. This, however, was a minority group, and more research would be needed to understand the true impact of this phenomenon.

The broad literature on peer impact on career choices (Rowe, Wouldbroun, and Galley 1994; Alika and Osa-Edoh 2009) suggests that peers can have an impact on career decision-making. However, it was noted that most of the literature in the context on peer influences on career choices is focused on adolescent influences, and that there is no current literature that looks at the impact of peers on choice of specialty of medical students. The key finding in this study was that, within the

context of social factors, the participants' peers had virtually no impact on their career choices. Most participants noted that they were aware of what their peers were doing in their medical careers, and had often used them as a source of information to find out about certain careers. However, they were unequivocal in agreeing that this had no impact on their career choice.

This study leads to the postulation that peers can play a key role in acting as trusted sources of information for individuals in relation to assisting them in making their career choice, but they are not influencers of this choice itself. This builds on the broader literature that suggests that the younger generation sees peers as a vast source of knowledge (Gursoy, Maier, and Chi 2008). This is similar to the effects of the "hidden curriculum" whereby the norms, values, and beliefs are transferred across peers conveyed via the social environment (Giroux and Penna 1983). However, it is acknowledged that there are a range of mechanisms that the emerging generation uses as a source of information, and peer input is just one source of this information.

7.3.3 Professional factors

Patient interaction, scope and variety of practice, and professional autonomy were the dominant professional factors that influenced choice of specialty for all participants. Earlier studies have noted that individuals that pick careers in primary care have a high patient orientation (Kiolbassa, Miksch, and Goetz 2011; Pawełczyk, Pawełczyk, and Bielecki 2007) and place a higher value on patient interaction (Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007) and providing continuity of care (Buddeberg-Fischer et al. 2008; Thistlethwaite, Kidd, and Leeder 2008). Other factors such as scope and variety of practice, which have been identified in the literature (O'Connell 1997; General Practice Education & Training 2007) as key influencers, were also confirmed as being important in this study. Professional factors were also noted as more prominent with individuals from an urban setting, as opposed to those from a rural background. However, it was not clear as to what had driven this difference, and this is something that should be explored further.

7.3.3.1 *Patient Interaction*

Senf et al. (2004) noted that patient relationships were the most important factor for those who picked general practice as a career. This was found to be consistent with the current study, with all participants acknowledging the value of patient relationships. This is a key aspect that is often ignored by policy makers in their policy considerations. General Practitioners, across the board, pick their choice of specialty because they fundamentally value the patient interaction and relationships. Policy drivers that undermine this interaction will ultimately detract from the individual's choice of this specialty, which has the potential to create significant disconnect. Whilst this aspect was consistent with all participants regardless of age, gender, career stage, graduate status or childhood exposure to medicine, some subtle differences were also noted.

Broadly, it was found that female participants were more likely to refer to professional factors, as compared to their male counterparts. This is interesting in the context that they were also more likely to be influenced by key personal factors, as outlined in section 7.2.1.1. This led to the postulation that female counterparts had given this aspect greater thought, due to the fact that other personal factors were already influencing them towards exploring careers that were going to meet these factors. As such, women had naturally spent more time exploring the professional factors, since they were keen to pick careers that were going to provide job satisfaction, which is noted to be a key determinant of career choice (Ehrhart 2001; Kalleberg 1977; Clark, Kristensen, and Westergård-Nielsen 2009). However, it should be noted that referring to this factor more often does not necessarily infer that it was a stronger decision influencer for female participants as compared to male participants.

The other subtle difference noted was that prevocational doctors valued connection with patients above all other professional factors. This is an important finding, and one that has not been previously explored in the literature. Prevocational doctors are at a critical stage of their career because they are at the cusp of deciding and

entering a vocational training program within medicine. This is relevant to policy making since over 90% of prevocational training in Australia currently occurs in the hospital system—an environment where it is difficult to develop long-term patient connections due to short stays. This provides a key insight into the fact that these individuals are unable to fully experience or appreciate the job satisfaction that is linked to forming long-term relationships with their patients at a time when they are making their career choice. This presents both opportunities and challenges for various specialties trying to attract these doctors into their professional streams.

7.3.3.2 *Job satisfaction*

Researchers have typically looked at job satisfaction from a values-based approach, which assumes that work that enables satisfaction of one's needs leads to job satisfaction (Kalleberg 1977). However, within medicine, there are a number of studies that focus on professional attributes of job satisfaction (Petchey, Williams, and Baker 1997; Senf, Kutob, and Campos-Outcalt 2004; Kiolbassa, Miksch, and Goetz 2011), as well as job-dissatisfaction (Larkins et al. 2004; Steinhauser et al. 2011). It was noted that broadly the concept of "job-satisfaction" was not a dominant factor, and was not really flagged by any of the participants.

However, the participants did focus on professional aspects of the work such as patient interaction and scope of practice and their importance in influencing decision-making. Previous studies (Buddeberg-Fischer et al. 2008; Thistlethwaite et al. 2008; Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007) have noted that these are key markers of job-satisfaction, and the current study further confirms this. Again, it should be noted that these are stable variables that have stood the test of time and hold true across all cohorts. Any policy that confirms or supports these attributes is likely to be well received. However, any policy that has the potential to undermine these attributes carries the risk of disenfranchising the broader GP workforce.

One key factor that emerged from this study was the concept of professional autonomy. Participants noted that the ability to have ownership and control over the day-to-day clinical practice, hours of work, type of patients and even patient loads, to some extent, was a unique aspect of general practice, and one they valued.

This was noted as a strong underlying factor amongst practising GPs, and one that has not been explored in the literature at great depth. It was further noted that this factor was not one that was well recognised or understood by students and prevocational doctors, and GP registrars and practising GPs were more likely to talk about its importance. These observations support the argument that this particular factor is particularly complementary with the personal factors related to work-life balance, and should be exploited. This has implications for policy makers since it provides yet another area that can be used to influence specialty choices of the emerging medical workforce.

7.3.3.3 *Type of medicine*

A number of studies have noted that the type of medicine that doctors can practise is an important feature of career choice. These include variety and scope of practice (O'Connell 1997; General Practice Education & Training 2007), holistic approach to medicine (Rowsell, Morgan, and Sarangi 1995; Steinhauser et al. 2011), in addition to patient interaction (Kiolbassa, Miksch, and Goetz 2011; Pawełczyk, Pawełczyk, and Bielecki 2007; Senf, Kutob, and Campos-Outcalt 2004; General Practice Education & Training 2007). The current study lends support to these elements. In particular, all participants acknowledged variety and scope of practice as an important differentiator for general practice, and one that was a key part of the professional job satisfaction related to this specialty. The concept of holistic approach towards medicine was noted by some participants but was not as commonly referred to as the other factors.

These key issues related to choice of specialty were noted as largely consistent with current literature. This is important within the context that the current study was an inter-generational study, and included candidates at different stages of their professional journey. The fact that these issues are consistent in the literature and across the broad spectrum of candidates in this research demonstrates that these are very “stable” influencers, and future policy decisions should not undermine these in any way, as that could have a significant, negative impact on medical specialty career choices.

7.3.4 Life events

This was a new area that emerged during this study and can be best understood within the context of individual life journeys. A number of participants mentioned that some of the influencers for them in choosing their specialty had nothing to do with personal, social or professional factors, but were linked to the broader context of their life. These were either related to practical opportunities that came up during the course of their personal and professional lives and pushed them in a certain direction, or they were related to the timing of key events such as age, biological factors in relation to having a family, and other common events in their life journey.

Whilst the actual life events were not linked to any particular cohort or phenomenon, they affected the participants differently based on gender, career stage, origin, graduate status and childhood exposure to medicine. Female participants and postgraduate entrants into medicine were more likely to be affected by the timing of key life events, as compared to male participants. This is not an unreasonable finding since the average age of the cohorts exiting medical school and entering prevocational training also coincides with age groups where women start considering issues related to family rearing.

Practical opportunities were found to be a stronger influencer for prevocational doctors, those from an urban origin, and those who had early exposure to medicine. This is interesting because it lends itself to the discussion related to accessing particular rotations within the hospital system. It is well known that getting one's choice of rotations across the hospital years can be a challenge for prevocational doctors. This finding outlines that if particular opportunities are made available to these individuals, this can significantly change their future career choice. As such, programs such as community internships or prevocational placements in general practice have significant value in this regard.

In relation to practical opportunities being a strong influencer for the urban cohort, it would seem that this could be linked to the general nature of "competitiveness" to access particular choices in the urban setting; however, this would require further exploration to confirm.

On face value, one could argue that these are random chance events as part of participants' individual life journeys and of no real consequence to policy-making or further analysis in relation to this study. This study argues otherwise, emphasising that partnering and child rearing is in fact a significant part of the human existence. These life events need not be so abstract, and can be of value to policy makers and individuals alike. Krumboltz, through his theory of planned happenstance (Krumboltz 2009), recognizes the fact that unpredictable social factors, chance events and environmental situations must be taken into account when it comes to career decision-making. He suggests that people should embrace unexpected opportunities for learning and growth, adopting a more flexible attitude towards change and unpredictability (Mitchell, Levin, and Krumboltz 2011). Whilst individual life events cannot be controlled, the learning related to the impact of practical opportunities can be applied. Krummboltz's theory (2009) of planned happenstance was primarily for individually driven career events, however, this study suggests that the same impact can be achieved through external planned events.

This study also indicates that the combination of planned practical opportunities offered at the appropriate time for individuals has the potential to create the environment for influencing career choices. The linkage with personal life events such as child rearing can be directly addressed and in fact accounted for in strategies introduced to target this particular cohort. It can be further argued that this is not a new concept, and marketers have been undertaking similar activities whilst trying to promote various specialties (General Practice Education & Training 2007; Gill et al. 2012; Goodyear, Kennedy, and Wall 2007). This lends itself to providing a framework for policy makers to created planned opportunities for medical professionals at key stages of their life, whilst acknowledging the significant

events related to partnering and child rearing, with a view towards influencing career choices.

The issues related to timing are harder to orchestrate; however, it would be important to note that these mirror other personal factors for female and postgraduate entrants who are more likely to choose careers that offer flexibility, work-life balance and shorter training periods.

7.4 Primary and Secondary Factors

Choosing a medical specialty is a complex decision process. The analysis and discussion so far confirms that there are in fact a range of factors that are important, and that these have different levels of influence in the decision-making process. Examined in isolation, each of these factors can be seen as a key driver. However, one cannot imagine that each of these factors carries the same weighting, and ultimately, certain factors have to be stronger influencers than others. In addition to finding out the importance and impact of the range of personal, social and professional factors that influence choice of specialty, the ultimate reasons as to what the participants in the study regarded as the most important reason(s) for picking a specialty were also able to be collected and analysed. These are examined within the context of key attributes, and discussed below.

7.4.1 Gender

Female participants (50%) were more likely to be driven by personal factors as the ultimate driver that determined their choice of specialty, as compared to their male (33%) counterparts. This is an important finding for the Australian context where the literature on this remains scant and confirms the findings from a number of other international studies [New Zealand (Lawrence, Poole, and Diener 2003), the UK (Heiligers 2012; Heiligers and Hingstman 2000; Wakeford and Warren 1989) and the USA (Levine et al. 2013)] that gender is a significant driver.

The key difference between the current study and a number of others, whether national or international, is that it asked participants to make a clear distinction between the primary and secondary drivers of choice of specialty. This leads to a richer understanding of the impact of gender, and it was found that the professional factors were an important secondary driver for all participants, regardless of gender (male 48%, female 46%). So, the key difference in this context is that the male counterparts tended to be, more or less, similarly impacted by personal, social and professional factors as a primary driver. It also confirms the anecdotal evidence that female counterparts are equally concerned about the professional aspects of the job as their male counterparts, which is an important consideration for policy makers. The reason that personal factors were more dominant for female participants is easily explained due to the context of child rearing and family commitments, but it does not detract from the importance of the professional drivers.

7.4.2 Age

The analysis of key drivers based in participants' age provides a unique perspective into career choice drivers. The youngest of the cohort (age group:17-24) was strongly driven by professional factors (71%) as the primary driver, and personal factors (71%) as the secondary factor. This is typical of the Generation Y cohort, which has been characterised as being driven by professional and personal satisfaction (Jorgensen 2003; Zemke, Raines, and Filipczak 2000). This has implications for planning curricula of medical universities, as a majority of the students would fall under this age bracket. These early years can often create lasting impressions (Lambert and Goldacre 2011; Ward, Kamien, and Lopez 2004) and, hence, a balanced exposure to key specialties and their related personal and professional attributes is important. Policy makers need to consider better ways to ensure that medical school curriculum does not push students in a particular direction, but has the capacity to provide broad exposure to medical specialties.

However, as the participants grow older (age group: 25-30), there is a sharp reversal in their key drivers, with personal factors (69%) becoming a key driver and professional factors (56%) still a dominant secondary driver. This is the stage when

most individuals are in personal relationships and starting to think about current or future family commitments. This is also the age when a large proportion would be experiencing the demands of the hospital system or vocational training towards a specialty, which would put additional demands on them. As such, policy makers need to understand the importance of providing flexibility and work-life balance at this crucial stage since many individuals would be on the cusp of picking their choice of specialty.

Analysis of the responses of the next age group (31-35) revealed that they had swung back to regarding professional factors (50%) as the key driver, and personal factors (50%) as the secondary driver. This suggests that these participants were settling into their career and starting to focus more on completing their vocational training towards their specialty whilst still striving to find balance in their personal lives. Whilst the decision on choice of specialty may have been made already, nonetheless, if there is a disconnection with the professional attributes, these individuals may reconsider their options and choices.

By the time the participants typically finish their vocational training (age group: 36-40) the emphasis has swung once again towards personal factors (63%) as the primary driver, followed by professional factors (75%) as the secondary driver. Settling into their chosen professional careers and having young families are typical characteristics of this cohort. This is important to note since it does have workforce contribution impact, and these individuals may be less driven to work longer hours or to live in locations that are not supportive of family and schooling considerations.

Lastly, it is noteworthy that as the participants mature (age group: 41-50), social factors emerge as a primary driver (50%) and the secondary drivers are equally influenced (50% each) by social and professional factors. This demonstrates the importance of peer support, professional networks and continued professional development for this cohort. Typically, this group has developed firmer expectations of their professional life, and policy that undermines this will usually draw their ire.

This group is a key influencer in policy decision-making, and they are often strong advocates for their profession.

The current study is the only one of its kind that has provided such a unique and rich perspective into the importance of key factors at various life stages and how these can vary significantly across age groups. This research highlights the woeful inefficacy of any policy driver that takes a simplistic and homogenous approach towards influencing recruitment and retention across any specialty, and should be seen as a key driver for future policy. This must be a significant consideration for policy makers as they attempt to target incentives and policies towards influencing choice of specialty of doctors to meet workforce retention, contribution and location outcomes.

7.4.3 Career stage

Whilst analysing the primary and secondary drivers based on career stage, it was acknowledged that these are inextricably linked to age. However, it should be noted that as more universities have moved towards postgraduate entry courses for medicine, and with the influx of international medical graduates, the homogeneity of age groups across career stages has reduced and, hence, there are subtle differences.

Both medical students (50%) and prevocational doctors (50%) were found to be influenced by personal factors as the primary driver, followed by professional factors (medical students 50%, prevocational doctors 63%) as the secondary driver. This demonstrates that personal factors feature at the early stages of their career and, hence, must be addressed to ensure we attract and retain the workforce. This also shows that policy makers should not be putting any policy in place that does not meet the “work-life balance” test since it is likely to have a poor uptake. It was noted that during the vocational training years, there was a virtual congruence between personal (38%), social (31%) and professional (31 %) factors as primary drivers, and that this remained similar for secondary drivers. This is an important finding as it demonstrates that vocational trainees have different needs, and it is

important to meet all the elements of personal, social and professional influencers. This is an ongoing challenge for policy makers, as this group is often seen to present a unique set of challenges and concerns (Bowler and Jackson 2002; Brett et al. 2009; Larkins et al. 2004).

It was heartening to see that practicing GPs still continued to value professional factors as the primary (42%) and secondary (50%) drivers of choice of specialty. This poses some food for thought for policy makers within the context of the ongoing national debate on changing the scope of practice for a range of health practitioners, including GPs, since there is risk of getting this wrong and having a detrimental impact on workforce attraction and retention over time. As Australia continues to experience a GP workforce shortage, any reduction in the existing workforce in terms of contribution can have a substantial short-term impact, and policy makers need to be careful in implementing any policy changes that have the ability to undermine the core professional factors.

7.4.4 Origin

Origin had some impact on choice of specialty, with those from a rural background quoting professional factors as the primary (50%) and secondary (50%) factor. Participants from a regional area emphasised personal factors (80%) as the primary driver and professional factors (60%) as a secondary driver. Urban origin participants were more homogenous, with a slight emphasis on personal factors (41%) as the primary driver, and professional factors (44%) as the secondary factor. One reason for this could be that people from a rural origin usually have better work-life balance (Somers, Strasser, and Jolly 2007) and, hence, are more likely to be driven by professional factors, whereas those from an urban setting are more influenced by personal factors with a stronger need to find work–life balance. However, this is acknowledged as an area that requires further research to determine the underlying areas driving this observation. The rural-urban debate should be recognised as a multi-factorial issue, and these findings should not be taken out of context.

7.4.5 Graduate status

Undergraduate students were more likely to quote professional factors (48%) as a primary driver, and social factors (44%) as a secondary driver. This is a key finding as it demonstrates the importance of medical school curricula, but also demonstrates the impact of role models and mentors for this group. These findings are further corroborated in literature (Azizzadeh et al. 2003; Campos-Outcalt et al. 1995; Wright, Wong, and Newill 1997), and suggest that it is important to continue to focus on professional aspects of medicine through strong role models during the university years.

Interestingly, postgraduate entry students were found to be more influenced by personal factors (54%) as a primary driver, and professional factors (63%) as a secondary driver of choice. It can be argued that this is due to two factors: that these individuals are older and, hence, experience the same issues related to age impacts as per section 7.3.2; and that they have broader life experience and often have some work experience prior to entering medical school, which means they are less likely to be driven by role models.

There are notable differences on key drivers based on graduate status, and this has implications for policy makers to ensure the right policy levers are targeted towards each group, rather than a blunt homogenous approach. This is a key finding since historically, incentive programs and policy levers have been applied universally across the medical university cohorts. The current research demonstrates that such an approach is unlikely to have the desired impact, and due consideration needs to be given to the inherently different nature of these groups. Furthermore, it is noted that some of the policy levers that were put in place were done when the majority of the medical universities offering undergraduate programs. As the postgraduate programs become more popular and widespread, there needs to be a complete overhaul of the traditional policy and incentive programs to direct workforce outcomes, and a more complex approach needs to be taken.

7.4.6 Childhood exposure to medicine

No major differences were found amongst participants who had no exposure (42%), substantial exposure (40%), or minor exposure (46%) to general practice and to medicine in relation to their primary drivers of choice of specialty. The only noteworthy difference in this analysis was that participants with substantial exposure to medicine were more likely to state professional factors (60%) as a secondary driver of choice of specialty. This suggests that this is due to the fact that the early exposure to medicine has given these individuals a greater understanding of key aspects of the professional factors and, hence, they are taking this into consideration as part of the decision process. However, it is acknowledged that the current study was not definitive in this area, and these results should be used cautiously, with further research recommended.

7.5 Chapter Summary

This chapter has delivered a detailed discussion and interpretations of the findings from chapter 6. A representation of the 77 findings from the previous chapter in a structured matrix which breaks them into the key areas of personal, social and professional factors was an important part of this chapter. This formed the foundation of the discussion and interpretation of the findings and provided a unique insight into understanding the data. As part of the discussion, the new learning from this study has been clearly detailed within the context of personal, social and professional factors. The new concept related to life events that was illustrated in the previous chapter was also examined. The chapter concludes with a detailed discussion of the primary and secondary factors impacting on choice of specialty within the context of key variables such as participants' gender, age, origin, career stage, graduate status and childhood exposure to medicine. This has afforded a rich understanding of the findings from this study. The next chapter provides a conclusion of this research study, key recommendations, and areas for future research.

8 Conclusion and Recommendations

8.1 Chapter Overview

This chapter provides the conclusion to this research study and offers key recommendations for the future. This is noted as an important and timely piece of research, which, whilst adding to the body of literature on this topic, provides great insight for government policy makers, workforce planners, medical colleges and universities, as well as professional associations and health service providers. Section 8.2 articulates the final conclusion to this study and captures the essence of the understanding obtained through the findings and discussion detailed in chapters 6 and 7. Section 8.3 provides a summary of the key contributions of this study from methodological, theoretical and practical perspectives, and offers a guide to future researchers whilst outlining some practical implications of the research study. Section 8.4, in particular, outlines implications for health policy in relation to influencing choice of specialty. In section 8.5, confirmation that the key research objectives outlined in chapter 1 have been met is demonstrated, and a brief summary of the strengths and weaknesses of this research study is presented. This is followed by suggestions for future research. The chapter concludes with a summary and reflections.

8.2 Conclusions

The choice of medical specialty is an inherently complex and interrelated process, and factors influencing the choice of specialty, due to their very nature, are bound to differ for individuals. Medical students and prevocational doctors today are facing a complex decision process that is very difficult to influence using blunt policy instruments. For example, policy instruments such as bonded medical scholarships, which offered money to young medical students and linked them to an obligatory return of service, have received vast criticism (Hoffman 2015a) and are proving to be ineffective because they fail to address the range of factors that are ultimately important to medical professionals.

This research has covered a wide range of theoretical constructs related to decision theory and career theory within the context of existing literature to gain a better understanding of the decision process and key factors that influence choice of specialty for medical students, GP registrars, prevocational doctors and practicing GPs. It was found to be important to understand how these theoretical constructs can be applied within the context of this study to better understand the findings obtained from this research.

This study offers a range of findings that are noteworthy and important to consider. Decision theory is a broad interdisciplinary field of study, encompassing areas such as economics, psychology, philosophy, mathematics and statistics (Kahneman and Tversky 1984; Bell, Raiffa, and Tversky 1988), and some of these normative constructs do not adequately explain the decision process considered in the context of this study. As identified by Tennyson (1997), human decision-making is not simply the product of an individual's internal cognitive process, but the outcome of interactive functional operations, including both internal and external factors from diverse sources.

Career theory is acknowledged as an advanced theoretical field, and a lot of work has been done in relation to identifying how individuals pick career pathways and make related career decisions, resulting in Holland's (1962) RAISEC model, the Myers-Briggs Type Indicator (MBTI) and the career decision-making process (CDMP) of Gati et al. (2010). However, alignment with existing career models was determined not to be the purpose of this study since the objective was to understand how and why particular career decisions are made. As such, the focus was largely on the process of how individuals make these career decisions (Gottfredson 1981) within the context of the following: generational issues (Zemke, Raines, and Filipczak 2000); personal attributes such as gender (Croson and Buchan 1999; Rojewski and Hill 1998) and work-life balance (Gursoy, Maier, and Chi 2008); professional factors such as job satisfaction and fit (Ehrhart 2006; Cennamo and Gardner 2008); and socio-environmental factors (Bandura 1989; Bandura 1986) and opportunities (Krumboltz 1976).

An examination of the decision process under the lenses of personal, social and professional factors was carried out, and this highlighted some important findings (see table 7.1). The examination demonstrated that items such as money, prestige and peer interaction did not have a driving impact, whilst role models, scope of practice and practical opportunities did. Subtle differences related to gender were also noted, with females more likely to be influenced by personal factors and key life events. However, above all, the study revealed that interaction with the range of factors is not a uniform process, and different individuals are influenced differently based on a range of factors in their personal and professional lives, which are further impacted by age and career stage.

It was concluded that the decision process related to this research study is better explained by viewing it as a complex cognitive process that is undertaken within a personal, social, and professional context particular to each individual. The original model presented in fig 2.1 aptly captures this complexity and is best suited to describe this process. Fig 2.1 is reproduced below for ease of reference:

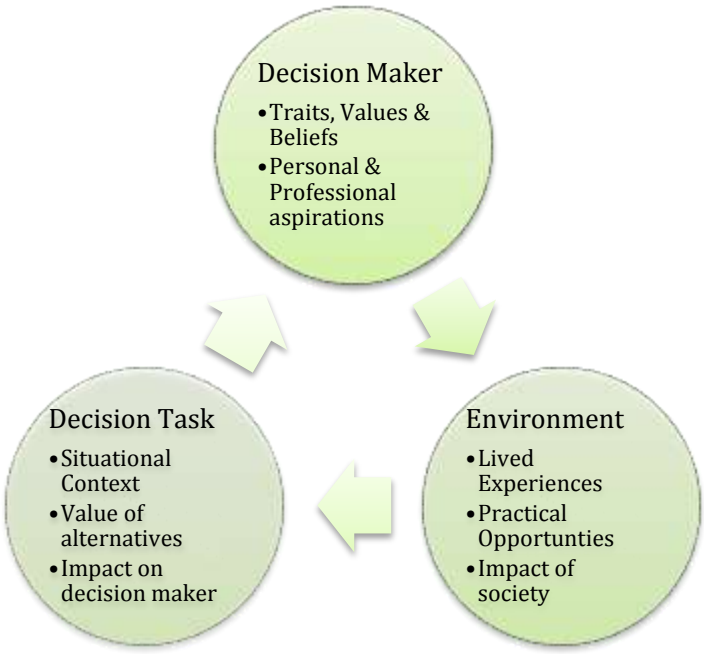


Figure 2.1 Researcher's proposed model for describing the decision-making process of doctors choosing specialty. Adapted from "Transactional process model of complex dynamic decision making" (Chang 2000)

This study has provided a deeper understanding of this process, which is essential for truly understanding what interventions can be applied to influence choice of specialty. Whilst some interventions can be tailored to groups or subsets of individuals, it should be acknowledged that the process will be unique for each, and a standard approach to applying broad interventions will not work. Figure 8.1 provides an overview of the key issues that influenced the choice of specialty within the context of this study.

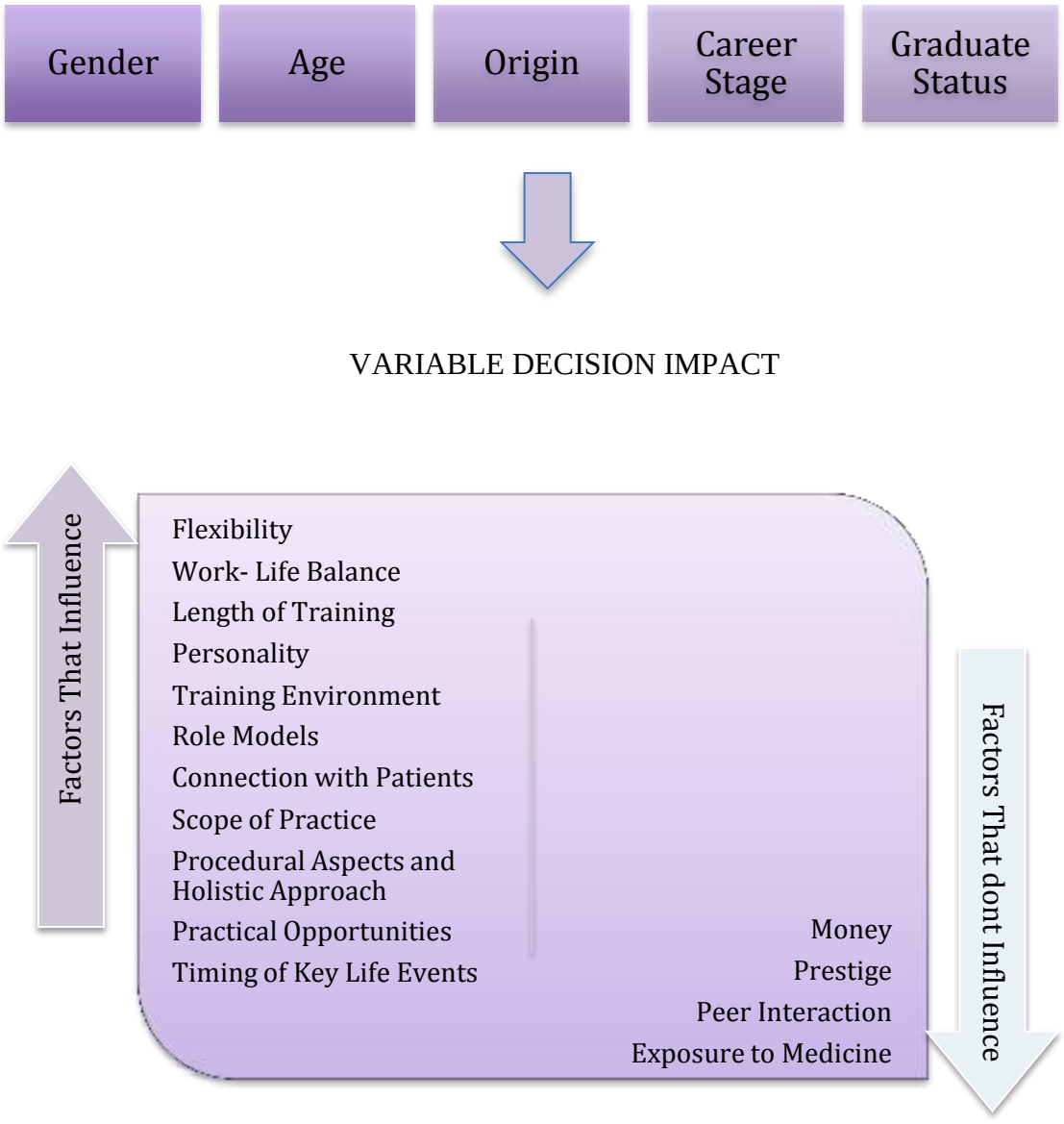


Figure 8.1 Factors that influence decision-making

Understanding and acknowledging this complexity is essential because it demonstrates that there is a direct link to personal beliefs and desires within the context of the social and professional environment which impacts career choice.

The study has led to the conclusion that individuals will have their own preference matrix (conscious or unconscious) that ultimately determines their career pathway and choice of specialty. The linkage and understanding of how these interrelate for an individual, or groups of individuals, is essential for a range of stakeholders, including government policy makers, workforce planners, medical colleges and universities, as well as professional associations, health service providers and others who design interventions to manage workforce attraction, retention and distribution across various specialties. This suggests that these stakeholders need to take a multifactorial approach to recruitment to GP careers (and broader medical careers) because, in the end, different things matter to different people, and these change over time and across different career stages based on a range of closely interrelated factors.

8.3 Contributions of the Research

The findings of this study are significant to the further development of existing literature in relation to decision factors that influence choice of specialty amongst medical students, prevocational doctors, GP registrars and practicing GPs. The following sections outline some of the key contributions in relation to the methodology, theory and practice upon which this study has been based.

8.3.1 Methodological contributions

This research makes a modest contribution to the methodology of phenomenological studies involving medical students, prevocational doctors, GP registrars and practicing GPs. First, it adds to the body of literature supporting interpretive research and the importance of qualitative methodologies to gain a deeper understanding of the key personal, social and professional factors that influence choice of specialty. Second, it contributes to the development of participant selection. Some research studies can rely on a small cohort of

geographically homogenous participants. However, this study demonstrates how technology can be used to integrate face-to-face, telephonic and online interviews to obtain a broad set of demographically and geographically heterogeneous set of individuals to participate in a study, thus improving the authenticity, trustworthiness and transferability of the study and adding to the overall rigor of the research.

Two key contributions in relation to the research design have provided a unique perspective for research in the future. The first is the identification of the fact that "personal", "social" and "professional" factors all influence the career decision process, accompanied by the recognition that these factors are distinct from each other. Acknowledging this provides a broad lens that can easily be used in any research design related to career aspirations in a range of industries. The second contribution is the integration of different career stages within the participant pool. By including four cohorts in the participant pool, each representing the various career stages, from medical students through to prevocational doctors, GP registrars and practicing GPs, a new perspective for considering future research in this area has been provided. This approach allowed for looking at the decision process through the eyes of the participants as they viewed their decision as it approaches, is imminent, and recedes. The richness of the data obtained, and the ability to investigate and analyse patterns across time through a single study, are key aspects of this research that should offer future researchers another way to approach research with medical professionals.

8.3.2 Contribution to theory

The literature related to career choices and decisions is quite complex, and this study provides a deeper understanding of the related concepts and their impact within the Australian context, with implications for international research.

Chapter 2 presented a sketch of the history of the literature related to decision theory (Hansson 1994; Tennyson et al. 1997; Joslyn 2000) and examined key decision constructs that relate to this study, including normative decision theory

(Peterson 2009), rational decision theory (Scott 2000; Oppenheimer 2008), sequential and non-sequential decision models (Dewey [1910] 1978; Mintzberg, Raisinghani, and Théorêt 1976) and the psychology of reasoning (Wason and Johnson-Laird 1972; Johnson-Laird and Byrne 2002).

An analysis of the literature related to career theory was conducted and constructs such as trait and factor theory (Parsons 1909), vocational developmental models (Ginzberg et al. 1951), vocational choice theory (Holland 1962), developmental self-concept theory (Super 1969), social learning theory (Krumboltz 1976), theory of work adjustment (Dawis and Lofquist 1984), social cognitive theory (Bandura 1999) and the theory of planned happenstance (Krumboltz 2009) were explored. However, whilst a number of individual constructs within the broad career literature were found to be relevant to the study, applying these constructs only provided a glimpse of the true nature of the career selection process, and failed to capture the complexity of the decision process.

As part of the literature review and iterative data collection process, a new model to explain this decision process (fig 2.1 as adapted from Chang 2003) was identified. It is argued that this model captures the complexity of the decision process and explains how medical students, pre-vocational doctors, GP registrars and practising GPs pick their choice of specialty. Across the board, it was noted that there is a fundamental lack of recognition of this complexity of the decision process in relation to choice of medical specialty, not only within the Australian context, but also globally; this is highlighted as the key contribution of this study.

Finally, a comprehensive analysis of the related medical workforce literature was conducted, and the discussion was categorised across broad domains related to personal, professional and social factors that influence choice of specialty. Particular issues related to prestige (Petchey, Williams, and Baker 1997; Creed, Searle, and Rogers 2010), remuneration (Grayson, Newton, and Thompson 2013), gender (Buddeberg-Fischer et al. 2006; Diderichsen et al. 2013), work-life balance (Larkins et al. 2004; Newton, Grayson, and Thompson 2005), role models (Kamien 2004),

clinical rotations (Tolhurst and Stewart 2005) and other clinical factors (Senf, Campos-Outcalt, and Kutob 2005; Gaspar, Jesus, and Cruz 2011) that impact choice of specialty were explored as part of this process.

A number of studies have tended to focus on individual factors such as remuneration (Tang, Kim, and Tang 2000; Morra, Regehr, and Ginsburg 2009; Tang 1995), prestige (Bland, Meurer, and Maldonado 1995; Creed, Searle, and Rogers 2010; Senf, Campos-Outcalt, and Kutob 2003; Senf, Kutob, and Campos-Outcalt 2004) or small groups of factors such as personal considerations (Thistlethwaite et al. 2008; Newton, Grayson, and Thompson 2005), origin and rural work intentions (Kamien 2004; Laven and Wilkinson 2003; Norris 2005; Pretorius, Milling, and McGuigan 2008; Somers, Strasser, and Jolly 2007; McDonald, Bibby, and Caroll 2002).

These studies have highlighted the importance of the factor(s) being studied, but, in the process, have failed to acknowledge the complex inter-relationships among these factors, and that the ultimate choice of specialty is a result of these inter-relationships. This is a critical contribution of this study because it demonstrates that individual factors such as prestige and remuneration are ultimately irrelevant in the overall context of the complex decision process, whilst other studies would have us believe otherwise. The other significant contribution of this research is that it provides a unique intergenerational perspective, and demonstrates that key factors such as patient interaction and scope of practice are stable variables that have stood the test of time and hold true across all cohorts. Any policy that confirms or supports these attributes is likely to be well-received. However, any policy that has the potential to undermine these attributes carries the risk of disenfranchising the broader GP workforce.

The findings in this study provide a research basis in the fields of career choice and the attraction of particular specialties, with implications for a range of related industries. The study suggests that this is particularly relevant to policy formation,

which has, in the past, been known to focus on individual factors influencing the health workforce, while a more holistic focus is needed.

8.3.3 Contribution to practice

There are a range of policy makers such as federal and state governments, hospital departments, workforce planners, medical colleges and universities, as well as professional associations and health service providers that need to consider the findings from this research as they create, advance or influence workforce-related interventions. The concept that there are, in fact, a range of personal, social and professional factors influencing choice of specialty, and that these interact with each other differently at different stages of an individuals' personal and professional journey, has the most important implications for policy setting. Policy makers cannot apply policy instruments targeting singular factors that influence choice of specialty and expect them to have a material impact the make-up of the future medical workforce; rather, they need to consider the complex nature of the decision process and offer a suite of policy interventions that align to address the range of factors across different groups of individuals.

The findings clearly show the relative insignificance of financial rewards in engaging and retaining the medical workforce, although this is an area that has often been the focus of many policy interventions. Policy makers need to acknowledge and understand that they are seeking to influence highly skilled, educated and motivated workers who have a broad range of choices and are driven by a range of personal, social and professional factors that are further impacted by the particular time in their own personal and professional life journey. Any meaningful policy instrument must take a holistic view of the key factors that impact on choice of specialty and address multiple factors. As part of this process, it is critical to understand important factors that have remained stable over time, such as scope of practice, patient relationships, ownership, and control, to ensure that these are not undermined as part of the policy intervention, but are, in fact, further strengthened. The findings of this study are significant to the further development of existing

theories of medical workforce attraction and retention, and, although specific to medical specialties, suggest transferability across multiple employment sectors.

A key practical implication from the above is that, inherently, a single policy cannot achieve the target, and a more holistic view needs to be taken by implementing a suite of policies that are complementary and cover a range of issues. The medical workforce is not a homogenous cohort that will respond to policy instruments targeting a specific issue and applied universally. This study underlines the need for better targeting of incentives and policies to influence choice of specialty to manage the health workforce. These policies must take a multi-pronged approach to address the range of issues that have been uncovered in this study. A review of current attraction, incentive, remuneration, development and reward strategies and packages is also essential if policy makers are to have an impact on directing the composition and distribution of the medical workforce.

A number of studies have already acknowledged that whilst Australia continues to increase the total number of doctors in the community, there continues to be a maldistribution across specialties and across geographic areas to meet the need of the Australian community. This study supports the argument that the introduction of a more flexible and individualised approach to attraction, selection and retention of the medical workforce will provide long-term sustainable solutions to meet workforce needs. This study also offers the building blocks needed to ensure that this individualised approach is well-supported by the literature and will have the desired impact. This will ultimately move Australia towards self-sufficiency across the medical workforce, and allow it to move away from stop-gap arrangements such as workforce restrictions, short-term incentive structures and continued reliance on overseas-trained doctors.

8.4 Implications and Recommendations for Policy

This study has outlined some major new findings that have noteworthy implications for policy. It has been argued that the issue around “when” and “how” medical students make their choice of specialty is of particular importance to policy setters

since it allows them to position intervention strategies such as scholarships, incentives and GP promotion programs to create the best impact. It has further noted that there can be a lack of focus in professional literature on the cost-effectiveness of career-guidance interventions, thus making it harder for policy makers to act on these interventions. With this in mind, rather than suggesting particular strategies, the following key principles are provided to act as a framework for designing policy interventions targeting workforce attraction and distribution:

1. Work-life balance, compatibility with family considerations and flexibility are all-important considerations that have stood the test of time and do influence choice of specialty. They must be supported and protected; failure to meet these needs will not deliver policy expectations.

2. The medical workforce is not homogenous. The needs of individuals vary based on age, career stage, origin, graduate status and gender. Hence, a mix of strategies is needed to support these distinct individuals to ensure sustainable policy outcomes.

3. Remuneration, in isolation, is not a major influencer when it comes to choice of specialty. It is largely a hygiene factor, and individuals acknowledge that there is a difference in remuneration across specialties. Financial incentives, on their own, are therefore, unlikely to have an impact on influencing sustainable retention.

    a. Caution Note: This may change if particular specialties are considerably impacted in the future (e.g. the sustained financial freeze on Medicare rebates for GPs can devalue earnings by a significant amount over time).

4. Most doctors note that, in itself, being a medical practitioner offers a certain level of prestige. They further acknowledge that there is a difference in the prestige associated with various specialties, both within and without the medical profession. However, in choosing amongst specialties, there is no evidence that prestige has any impact on choice of specialty.

5. Poor-quality preceptorships and bad experiences in the hospital setting have a major impact on career choices, with future workforce implications.

6. Creating targeted practical opportunities that provide well-supported experiences at the right time can be an efficient and easy way to influence choice of specialty.

7. Peers are a source of information; role models are a source of inspiration. Both can be leveraged in ways to influence choice of specialty.

8. Professional factors such as patient relationships, scope of practice, job satisfaction and ownership are critical. These factors have stood the test of time and are consistent across cohorts, and should be protected.

9. Life is a journey, and things will happen along the way that will resist any policy intervention. However, planned interventions in the form of practical opportunities can have a substantial impact.

10. Influencing choice of specialty is a sufficiently complex process so that no single policy instrument can have the desired impact. The interventions need to be part of a strategic mix of complementary and flexible strategies to be effective.

The above key principles provide a broad framework for policy makers designing workforce interventions to better manage attraction and retention of general practitioners. It is recommended that future health policy strengthen the time-tested factors that are supported across the cohorts, and leverage the emerging factors to ensure a robust interest in general practice careers into the future. The findings from this research, and the key principles that have emerged as a result, provide a valuable contribution to the body of knowledge governing vocational specialisation factors for medical students and prevocational doctors that could also be of significance to other medical specialties facing similar workforce shortages.

8.5 Addressing Research Objectives

The purpose of this research was to explore key decision factors that influence individuals to choose general practice as their medical specialty. The research was designed to explore the career attitudes and decision variables across medical students, prevocational doctors, GP registrars and practising GPs to better understand key drivers for attraction and retention in careers in general practice.

As such, the research had the following key objectives:

1. Explore and compare perceptions related to the range of personal, professional and social factors that medical students, prevocational doctors, GP registrars and GPs consider when choosing their specialty;

2. Identify whether there are any patterns in “when” and “how” this choice of specialty is made;

3. Provide a richer understanding of the experiences and decision factors that drive career choices in general practice in Australia.

Research objective 1 has been clearly illustrated by the findings in table 6.32, which provides a rich understanding of the range of personal, social and professional factors impacting on choice of specialty across the cohorts.

The synthesis and discussion of the findings from chapter 6 are captured in great detail in chapter 7, and the findings matrix (table 7.1) provides an overview of when and how the choice of specialty is made and how it differs for the different cohorts. Chapter 7 also provides great insight into the decision process and identifies key “patterns” whereby certain factors have remained unchanged across the cohorts and are not impacted by age or gender, thereby meeting the requirements of research objective 2.

Finally, the detailed conclusions, recommendations and policy implications, as outlined in this chapter, have provided a richer understanding of the experiences of

the participants, and provide a deeper insight into factors that drive career choice in general practice in Australia, meeting the requirements of research objective 3.

8.5.1 Research strengths

Quantitative work has dominated research looking at choice of medical specialty amongst medical graduates in the Australian context (Brett et al. 2009; Ward, Kamien, and Lopez 2004; Pretorius, Milling, and McGuigan 2008; Shanley et al. 2002), with some notable exceptions (Bunker and Shadbolt 2009; Pearce and Hegarty 2003). However, in this research, a qualitative methodology was adopted to better understand the complex nature of the decision process. Smith (1983) and Creswell (1998) emphasise the value of qualitative methodology in gaining a greater understanding of the "how" and "why" of respondents' perceptions, which cannot be elicited easily from large-scale questionnaires. Denzin and Lincoln (2003) support this by arguing that qualitative research assists in "shedding light" on phenomena that are poorly understood.

Broadly, the findings of this research were well-supported by empirical research, and the key factors that emerged in this study such as work-life balance, flexibility, impact of role models, patient relationships and variety and scope of practice, were key issues that have been previously noted in literature as important factors that influence choice of specialty. Whilst there have been a number of research studies that have attempted to identify individual factors that impact choice of specialty such as money (Siveya et al. 2012), prestige and lifestyle (Creed, Searle, and Rogers 2010), and role models (Kamien, Bassiri, and Kamien 1999), there are virtually no studies that consider the dynamic and complex interaction of these factors in the personal and environmental context of the individual.

This research builds on this notion of complexity and provides a unique perspective for considering the decision process across the range of personal, social and professional factors and how these interrelate with each other under different individual circumstances to drive the ultimate decision process. As noted by other researchers (Thistlewaite et al. 2008; General Practice Education & Training 2007),

choice of medical specialty is a complex process with a number of factors impacting the individual. Using in-depth interviews, it has been demonstrated that the decision factors are not homogenous, and there are stark differences based on a variety of factors linked to gender, origin, graduate status, age and exposure to medicine.

This is also the first research of its kind to take an intergenerational approach to the exploration of decision factors that influence choice of specialty by including medical students, prevocational doctors, GP registrars and practising GPs. By including medical students, junior doctors, GP registrars and practising GPs, the research covers more than a forty-year span of decision influencers and key factors as to why individuals have picked general practice. This allows for unique insight regarding those factors that have remained common across the years, and what are new emerging factors that are impacting the current generation of medical students. This is a key strength of the research, as it allows for better understanding of stable factors such as patient relationships, variety and scope of practice and work-life balance, whilst also highlighting emerging factors such as flexibility, length of training and practical opportunities.

Perhaps, the defining contribution that this research makes to the body of literature is to dispel the myth that more money and greater prestige equals more GPs. The research has unambiguously demonstrated that money and prestige are, in fact, minor factors and, when seen in the context of the entire decision process, do not emerge as important contributory factors at all. However, it must be noted that money and prestige remain important hygiene factors. Attempts to water down or stunt remuneration, or deliberately reduce prestige by reducing or curtailing scope of practice, can still have a detrimental impact on workforce attraction and retention.

This study confirms that this concept of complexity is a key principle when it comes to decision factors that influence choice of specialty, and any attempts to drive

policy change based on isolated factors grossly simplify the true nature of this process, and will not achieve the desired impact for a large number of individuals. Lastly, whilst the research is primarily looking at general practice as the specialty endpoint, there is significant learning for other disciplines within medicine that are facing similar workforce shortages. The underlying causes that drive the personal and social factors are directly transferable to other medical specialties and have major implications for how these are supported via policy into the future across the hospital system. The notion of job satisfaction and patient relationships can be addressed through better communication across primary care and acute care settings using technology. The research design itself is easily replicable and could be used to gain a targeted insight into any particular medical specialty, or even across other professions such as engineering, law and economics, where there are numerous sub-specialties/domains to choose from.

8.5.2 Research limitations

The application of an interpretive research enquiry paradigm potentially includes some limitations as well as strengths. The key limitation is the interpretive nature of qualitative research in which the researcher is part of the issue being researched. Creswell (2003) suggests that this is not necessarily a weakness, but is an essential part of the research process. Specifically, in relation to this research, a single researcher collected and conducted the data analysis and its interpretation. Aspects of this process included the researcher determining the themes and categories relating to participants' comments in relation to the key factors that impact on choice of specialty. This limitation is well-documented by researchers (Banister et al. 1994), who suggest that the researcher is central to the data interpretation and that different researchers may provide different interpretations of data.

The limitation of the subjectivity of the researcher was addressed in this study by employing a number of techniques such as bracketing (Moustakas 1994) and member checks (Creswell 2003) to limit researcher bias and related impacts. The interviews were transcribed professionally, and cross-checked by using two independent companies to achieve high accuracy, and the researcher also used an

independent researcher to code 20% of the transcripts in order to establish inter-coder reliability. In addition, the researcher used a technique referred to as reader verification (Denzin and Lincoln 2003) by working with two independent supervisors, who were able to read and advise on the content of the research to ensure it represented a rational analysis of the logic of the documented experience. A further limitation may have been that the interviewer gathering data for this study was male. In other words, the question is raised as to whether the nature of participants' comments may have differed had the interviewer been female. For example, would issues relating to work-life balance, child rearing, and flexibility have been more explicit for female participants in the presence of a female interviewer?

Finally, the principal researcher was the Chief Executive Officer of General Practice Registrars Australia Ltd (GPRA), the peak national representative body for GP Registrars during the time when data was being collected. Therefore, the researcher may be known to some of the participants due to his involvement in the media and his role in the GPRA. Careful consideration was given to this, and it was noted that such an imbalance was unlikely to occur since the GPRA is mainly a support and advocacy organisation for GP registrars, and is in no way responsible for any aspect of their training. However, in order to mitigate against this, participants were predominantly picked at random, and it was made clear to the participants that the researcher was acting in his role as a research student from Curtin University. The participants were provided with information sheets, consent was obtained prior to conducting the interview, and participants were advised that they could withdraw from the research at any point even after the interview process.

Thus, these limitations were adequately addressed by giving careful attention to issues related to rigour, and by incorporating a number of identifiable, replicable and auditable processes and strategies to triangulate the data. In particular, the key attributes of triangulation, as identified by Creswell (1998), and broader techniques,

as supported by other researchers (Lincoln and Guba 1985; Denzin and Lincoln 2003; Herschell 1999), were explicitly included in the research methodology.

A high level of congruence was noted across the findings, despite working with four distinct cohorts that included a demographic and geographic spread, and this confirms the trustworthiness of the research. As such, this study provides a sound basis for providing a rich understanding of the personal, social and professional factors influencing choice of specialty, and lays the framework for future research in this area.

8.5.3 Suggestion for future research

The rich data obtained as a result of this study demonstrates that there are a number of areas that need to be better understood to grasp the nuances of the decision factors that influence choice of specialty across the cohorts interviewed. Some specific areas recommended for further research are outlined below.

Personality

The current study was not designed to focus on personality types and their ability to predict choice of specialty. It was found, however, that personality was in fact an influencer, regardless of gender, age, rural origin, career stage or other variables. That there is some literature (Boyd and Brown 2005; Stilwell et al. 2009) that correlates personality types (such as MBTI) in relation to choice of specialty was noted; however, there is no research that has looked at the correlation of personality types in relation to the key factors that influence choice of specialty that have been identified in this research such as work-life balance, flexibility and scope of practice. This suggests that future research in relation to personality types should attempt to correlate with certain factors that influence choice of specialty and not assume to serve as a direct predictor of specialty choice. This would provide a richer understanding of how personality types work across medical specialties.

Childhood experiences

A number of studies have established the impact of childhood experiences on work intentions and life choices (Naughton 1987; Hertzman 1994). However, there remains a paucity of literature testing the impact of these experiences on determining choice of specialty in medicine. Whilst attempts were made to investigate this, the data in this regard was not conclusive, and no linkages were found related to childhood exposure to medicine or general practice in relation to influencing choice of specialty within the context of personal factors. However, there remains anecdotal evidence suggesting this linkage, which needs to be confirmed via research.

Rural versus urban origin

A number of studies have looked at career issues related rural origin, and this has been shown to have an impact on picking careers in general practice (Kamien and Cameron 2006; Ward, Kamien, and Lopez 2004; Pretorius, Milling, and McGuigan 2008; Gill et al. 2012). These studies have, however, seldom explored the reasons as to why this phenomenon occurs. In the current study, some evidence was found that professional factors were a more important driver of choice of specialty for participants from an urban origin as compared to those from a rural origin. This suggests that there can be inherently different triggers for candidates based on origin, and this should be explored further to gain a better understanding of the underlying factors that influence choice of specialty in relation to origin.

Given the limited scope of this study, the above areas were not pursued in great depth. Further research in these areas is recommended as it can assist in establishing some of the underlying reasons as to why people pick certain specialties.

Finally, it was noted that researchers typically tend to focus on emerging medical students in relation looking at factors that influence choice of specialty. Whilst this is a key cohort that needs to be understood, there is great value in conducting research with multiple cohorts at different stages of training, as demonstrated by this research. This concept is under-utilised in the literature, has the potential to

provide vital information and deeper understanding of the phenomenon being observed, and should have a greater role in any research within this area.

8.6 Personal Reflections

This research has provided me with a rich understanding of the medical workforce in Australia and key factors that drive specialty choices. In some instances, this research has helped to confirm my own experiences on what is important within the context of the decision-making process of picking a vocation, whilst in other instances, it has awarded me with entirely new ways of discerning and interpreting individual choices of why and how they pick a certain specialty.

One of the key outcomes that I personally hold in high regard, confirmed by this research, is the actual lack of importance of money and prestige have when it comes to picking medical specialties. Over the last decade, I had often heard anecdotal evidence in my dealings with medical students and GP registrars that money and prestige are not really important in the context of choosing a specialty. This was in stark contrast to prevalent literature that had singled these factors out as a key driver influencing choice of specialty with policy implications. However, this particular research has confirmed that in fact these factors are less important than what seems to have been purported in the literature and via the anecdotal references to them in the broader medical community. Money, in particular, turned out to be just a hygiene factor, and did not influence the final decision in choosing across specialties. Personally, that offers me great comfort in knowing that the next generation of doctors are more focussed on attaining professional satisfaction and personal balance, and arguably have more satisfying and sustainable careers, while still earning a respectful income.

Whilst I have had the opportunity to work in the health sector since 2004, it was not till I started this research study that I truly grasped the importance of understanding the complexities the workforce, which is essential in crafting health policy. Through the interview process, I have gained valuable information, which will inform me as a

future researcher, policy maker and contributor to the broader context of managing a medical workforce with an underlying focus on recruitment, incentivising motivation and sustainable retention. I have also gained a sense of mutuality and resonance through the relationships with each of the individuals who agreed to be a part of this study.

The other notable finding that resonated with my understanding of how individuals make decisions was the fact that it was impossible to deal with the participants as a homogenous group that would exhibit certain tendencies across certain factors. Humans are not inherently homogenous, so why should their decision processes be any different? Each of the participants had their own individual life journeys, and the decisions they were making in relation to choice of specialty were a result of a complex set of factors interacting with each other at a particular instant in time in their personal, professional and social contexts. In studying these heterogeneous instances of decisions, certain patterns begin to emerge, which provide a deep understanding of this phenomenon.

Policy makers need to take this into consideration when directing workforce policy, rather than using narrowly focussed interventions that may waste substantial resources with little impact. Some of these changes will require a fundamental shift in how we recruit, train and retain our medical workforce, whilst others can leverage a range of incentives and practical opportunities to influence choice of specialty to meet workforce outcomes.

Lastly, I acknowledge and thank each of the participants for sharing their lives and personal stories with me, and, in the process, enriching both the study as well me as an individual. Without their participation, this research would have simply not occurred. Thanks to these individuals, the perspective on medical specialty choice that I now hold will inform my interactions in my future endeavours as I continue to work across public and private aspects of the broader health system. It does not go unremarked that listening carefully to patients is perhaps the greatest skill in

general practice and I now recognise more fully the importance of hearing—truly hearing—individual stories and understanding their relationships that inform, support and sometimes inhibit people in their desire to seek fulfilling careers. In that respect, this research has had the impact of allowing me to better understand my own personal drivers and influencers as I traverse my own career aspirations.

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Appendix 1: Literature Review of Similar Research

No	Title	Researcher(s)	Year	Country	Findings
1	Choosing a career in general practice: the influence of medical schools.	Hays RB	1993	Australia	Although isolation of influencing factors is difficult, admission criteria and undergraduate curricula may influence career preference. As the institutional environment of medical schools is weighted towards scientific research and specialized medicine, medical students may be socialized into choosing non-generalist careers.
2	Doctors badmouthing each other. Does it affect medical students' career choices?	Kamien, B A. Bassiri, M. Kamien, M.	1999	Australia	A low level of badmouthing by all medical disciplines is an unattractive part of the learning milieu of medical students. In this study it had an influence on the current career choices of 21% of participating students.
3	Factors influencing career development of Australian general practitioners.	Shanley, Brian C. Schulte, Katherine M. Chant, David. Jasper, Amy. Wellard, Rod.	2002	Australia	While general practice experience in undergraduate education is an important factor in career choice, vocational training strongly influences preparation for, and the type of general practice undertaken. Nevertheless, family circumstances were reported as the most important consideration, although male and female work patterns differed

No	Title	Researcher(s)	Year	Country	Findings
					markedly.
4	A comparison of practice outcomes of graduates from traditional and non-traditional medical schools in Australia.	Pearson, Sallie-Anne. Rolfe, Isobel. Ringland, Clare. Kay-Lambkin, Frances.	2002	Australia	Our study suggests that initial selection procedures of medical school candidates with particular background characteristics and attributes may influence practice outcomes
5	Factors influencing career development of Australian general practitioners.	Shanley, Brian C. Schulte, Katherine M. Chant, David. Jasper, Amy. Wellard, Rod.	2002	Australia	While general practice experience in undergraduate education is an important factor in career choice, vocational training strongly influences preparation for, and the type of general practice undertaken. Nevertheless, family circumstances were reported as the most important consideration, although male and female work patterns differed markedly
6	The decision to enter general practice	Chris Pearce, Kelsey Hegarty	2003	Australia	One of the difficulties is the lack of good, current Australian data as to which of the intrinsic or extrinsic factors have the greatest influence on career choice

No	Title	Researcher(s)	Year	Country	Findings
7	The viability of general practice in rural Australia	Max Kamien	2004	Australia	This editorial identifies that there is not much sense in recruiting and training rural doctors if the conditions under which they are expected to practise are not viable. In this context, two recent reports — Viable models of rural and remote practice and Easy entry, gracious exit — break new ground in defining the conditions necessary to build and ensure a viable rural medical practice
8	Isolation, flexibility and change in vocational training for general practice: personal and educational problems experienced by general practice registrars in Australia.	Larkins, Sarah L. Spillman, Margaret. Parison, Julie. Hays, Richard B. Vanlint, John. Veitch, Craig.	2004	Australia	Registrars commonly experience problems during vocational training. These may be related to structural, social and professional isolation, or a lack of flexibility in training arrangements and balancing work with other commitments.
9	Medical career choice and practice location: early factors predicting course completion,	Ward, Alison M. Kamien, Max. Lopez, Derrick G	2004	Australia	A rural background was found to be the most important predictor of both rural general and specialist practice.

No	Title	Researcher(s)	Year	Country	Findings
	career choice and practice location.				
10	Becoming a GP - A qualitative study of the career interests of medical students	Helen Tolhurst, Mark Stewart	2005	Australia	This study found that most students were deterred from a career in general practice because of negative undergraduate general practice experiences; consistent with other data
11	Pilot study of Myers Briggs Type Indicator personality profiling in emergency department senior medical staff.	Boyd, Russell. Brown, Terry	2005	Australia	This senior ED medical staff cohort suggests notable variations from the general population in terms of their MBTI profiles
12	Addressing general practice workforce shortages: policy options.	Thistlethwaite, Jill E. Leeder, Stephen R. Kidd, Michael R. Shaw, Tim.	2008	Australia	There is an ongoing shortage of general practitioners in Australia, accompanied by a decline in the popularity of general practice as a career choice. Many factors influence the career choice of junior doctors and medical students, including role models, the quality of clinical attachments during training, remuneration, and flexibility of training and working hours.

No	Title	Researcher(s)	Year	Country	Findings
13	Influence of a rural background on a medical student's decision to specialize in family medicine.	Pretorius, R W. Milling, D A. McGuigan, D	2008	Australia	Students graduating from rural high schools were more than twice as likely to enter family medicine than those from non-rural high schools.
14	Enhancing the choice of general practice as a career	Jill thistlethwaite, michael r Kidd, stephen leeder	2008	Australia	Many GPs no longer choose to work full time, and the flexibility of working hours is attractive for doctors and influences medical students' choice.The potential to vary hours and the diversity of the workload should therefore be highlighted as major attractions of general practice
15	Choosing general practice A review of career choice determinants	Narelle Shadbolt, Jeremy Bunker	2009	Australia	The most powerful determinant of career choice is self assessment of skills and attributes and matching that to the perceived intellectual challenge and potential for job satisfaction of available careers. Personal circumstances and attendant lifestyle considerations are then the most powerful reasons to modify that choice
16	Work intentions and opinions of general	Thomas D Brett, Diane E Arnold-Reed,	2009	Australia	Registrars favoured rural, outer metropolitan and metropolitan areas equally as practice locations. Obstacles to general practice

No	Title	Researcher(s)	Year	Country	Findings
	practice registrars	Cam T Phan, Robert G Moorhead and Dana A Hince			selected by respondents were, in descending order of frequency: increasing bureaucracy, workforce shortages, the poor image of GPs and poor remuneration
17	A new model to understand the career choice and practice location decisions of medical graduates.	Stagg, P. Greenhill, J. Worley, P S.	2009	Australia	The PRCC program affirms the career preferences of rural origin students while graduates with little rural exposure prior to the PRCC report being positively influenced to pursue a rural career path.
18	choosing general practice as a career, The influences of education and training	Jeremy Bunker, narelle shadbolt	2009	Australia	Overall, an individual's experience of medical education and training is a significant external influence on eventual career choice but it is challenging to determine the influence of individual components. Only a small percentage of medical students have firm career intentions at entry. There is strong evidence that students of rural origin are more likely to return to rural areas after graduation and choose more generalist careers. The influence of other entry criteria, university, and curriculum is less clear.
19	Medical specialty prestige and lifestyle	Peter A. Creed, Judy Searle, Mary E.	2010	Australia	Medical students have incorporated prevailing prestige perceptions of practising doctors and the community. Lifestyle rankings were

No	Title	Researcher(s)	Year	Country	Findings
	preferences for medical students	Rogers			markedly different from prestige rankings, where dermatology, general practice, and public health medicine were ranked the most lifestyle friendly, and surgery, obstetrics/gynaecology and intensive care were ranked least friendly.
20	General practice as a career: insights for workforce policy.	Piko, Lesley M. Phillips, Christine B.	2010	Australia	Australia's general practitioners are working fewer hours, and many are leaving medical practice. Although career downsizing is often seen as an abrogation of vocation, it may reflect a desire to broaden work experiences within a constrained set of options. Policy should focus on supporting and enhancing the development of GPs' careers.
21	Future models of general practice training in Australia	Jon D Emery, Lesley P Skinner, Simon Morgan, Belinda J Guest and Alistair W Vickery	2011	Australia	GP registrars must learn to apply best evidence within a well designed practice system that operates as a teaching and learning organisation and values continuous relationships with its patients. We need to adapt hospital and community rotations to meet these educational requirements. An advanced training year should become standard to allow consolidation, exposure to longitudinal care and development of proficiency in areas of relevance to GP registrars' specific career plans.

No	Title	Researcher(s)	Year	Country	Findings
22	Junior doctors' preferences for specialty choice	Peter Siveya, Anthony Scotta, Julia Wittb, Catherine Joycec, John Humphreys	2012	Australia	In a policy simulation it was found that increasing GPs' earnings by $50,000, or increasing opportunities for procedural or academic work can increase the number of junior doctors choosing general practice by between 8 and 13 percentage points.
23	Are medical students influenced by preceptors in making career choices, and if so how? A systematic review	Stagg, P. Prideaux, D. Greenhill, J. Sweet, L.	2012	Australia	Longitudinal integrated clerkships' duration of placement and continuity relationships with preceptors have the greatest influence on medical students in pursuing a primary care career. This information informs medical schools, curriculum designers and policy-makers in reforming medical education to address workforce shortages.
24	Predicting who will choose a family medicine residency	Nasmith, Louise; Rubenstein, Heather ; Goldstein, Howard; Sproule, Donald ; Franco, Elaine D. ; Tellier, Pierre	1997	Canada	Only the GSSS accurately predicted the applicants' first choices (for agreement between both raters: sensitivity, 81%; specificity, 70%; accuracy, 78%). No significant association was found when comparing matching applicants' scores obtained during the selection process with their scores on the six-month evaluation forms.

No	Title	Researcher(s)	Year	Country	Findings
25	Does a rural educational experience influence students' likelihood of rural practice? Impact of student background and gender.	Woloschuk, Wayne. Tarrant, Michael.	2002	Canada	A rural educational experience at the undergraduate level increases the stated likelihood of students participating in rural locums and helps to solidify existing rural affiliations. Students with rural backgrounds have a more favourable attitude toward rural practice.
26	What does it mean to be a family physician?: Exploratory study with family medicine residents from 3 countries.	Beaulieu, Marie-Dominique. Dory, Valerie. Pestiaux, Dominique. Pouchain, Denis. Rioux, Marc. Rocher, Guy. Gay, Bernard. Boucher, Laurier.	2003	Canada	Respondents shared common conceptions of the family physician's role: continuity of care and patient advocacy were seen as the foundations of the discipline. Respondents also shared a sense of discomfort about how accessible they were expected to be for patients and about the scope of family practice. They saw family medicine as flexible and reported that they strove for balance between their professional and personal life goals. All respondents strongly believed that their profession was undervalued by the medical schools where they trained.

No	Title	Researcher(s)	Year	Country	Findings
27	The difference between medical students interested in rural family medicine versus urban family or specialty medicine.	Feldman, Kymm. Woloschuk, Wayne. Gowans, Margot. Delva, Dianne. Brenneis, Fraser. Wright, Bruce. Scott, Ian.	2003	Canada	Students interested in rural family medicine were more likely to have grown up rurally, graduated from a rural high school and have family in a rural location than others. They were more likely to be older, in a relationship, to have volunteered in a developing nation and less likely to have university-educated parents than those interested in a specialty. Attitudes of students choosing family medicine, rural or urban, include social orientation, preference for a varied scope of practice and less of a hospital orientation or interest in prestige, compared with students interested in specialties
28	Choosing family medicine What influences medical students?	John Jordan, Judith Belle Brown, Grant Russell	2003	Canada	The perception of a wide scope of practice attracts candidates to family medicine. Having more family medicine role models early in medical school might encourage more medical students to select careers in family medicine.
29	Career choice of new medical students at three Canadian universities: family	Wright, Bruce. Scott, Ian. Woloschuk, Wayne. Brenneis, Fraser. Bradley,	2004	Canada	Several factors appear to drive students toward family medicine, most notably having a societal orientation and a desire for a varied scope of practice.

No	Title	Researcher(s)	Year	Country	Findings
	medicine versus specialty medicine	Joelle.			
30	General practice as seen through the eyes of general practice trainees: a qualitative study.	Beaulieu, Marie-Dominique. Dory, Valerie. Pestiaux, Dominique. Pouchain, Denis. Gay, Bernard. Rocher, Guy. Boucher, Laurier	2006	Canada	Study participants were willing to accept the burden of general practice as long as responsibility could be shared and as long as there was freedom for flexible progress along a modern career track.
31	Family medicine as a career option: how students' attitudes changed during medical school.	Bethune, Cheri. Hansen, Penelope A. Deacon, Diana. Hurley, Katrina. Kirby, Allison. Godwin, Marshall.	2007	Canada	A large percentage of medical students considered family medicine as a career choice when they entered medical school. The percentage dropped significantly by the end of the second year of training. Attention should be directed toward understanding how the undergraduate medical curriculum in the first 2 years can protect and cultivate interest in family medicine as a career choice.
32	Cultivating interest in family medicine: family	McKee, Nora D. McKague, Meredith	2007	Canada	One mechanism to increase interest in primary care as a career is to initiate and foster a family medicine interest group that links

No	Title	Researcher(s)	Year	Country	Findings
	medicine interest group reaches undergraduate medical students.	A. Ramsden, Vivian R. Poole, Raenelle E			students with family physicians.
33	Why would I choose a career in family medicine?: Reflections of medical students at 3 universities.	Scott, Ian. Wright, Bruce. Brenneis, Fraser. Brett-Maclean, Pamela. McCaffrey, Laurie.	2007	Canada	Students identified several important influences that were subdivided into pre-medical school, medical school, postgraduate training, and life-in-medicine influences. Many positive and negative aspects of family medicine were reported during the preclinical period. Clinical exposure was critical for demonstrating the positive aspects of family medicine. Postgraduate training, future practice, and nonpractice life considerations also influenced students' career choices.
34	Rural intentions: factors affecting the career choices of family medicine graduates.	Lu, Diane J. Hakes, Jacquie. Bai, Meera. Tolhurst, Helen. Dickinson, James A.	2008	Canada	Many residents from the rural stream had no long-term plans to establish rural practices. Despite its intention to recruit family medicine graduates to rural areas and to obstetrics, the University of Calgary residency training program was not successful in recruiting physicians to these areas.
35	The impact of interest: how do family medicine	Kerr, Jonathan R. Seaton, M Bianca.	2008	Canada	The IgFM has been successful in increasing medical student exposure to FM and in supporting students' interest in this

No	Title	Researcher(s)	Year	Country	Findings
	interest groups influence medical students?.	Zimcik, Heather. McCabe, Jennifer. Feldman, Kymm.			discipline. Information from this study also provides strategies for future direction to the IgFM and other family medicine interest groups in Canada and the United States.
36	Medical students, money, and career selection: students' perception of financial factors and remuneration in family medicine	Morra, Dante J. Regehr, Glenn. Ginsburg, Shiphra	2009	Canada	Students are able to accurately predict income by specialty from an early stage of training and have a negative perception of income in family medicine. The perception that family physicians make too little money could be an important driver--or at least a modifier--in the lack of interest in family medicine
37	Attractiveness of family medicine for medical students: influence of research and debt	Vanasse, Alain. Orzanco, Maria Gabriela. Courteau, Josiane. Scott, Sarah.	2011	Canada	Fewer than 1 medical student in 3 (30.2% at the preclinical level and 31.4% at the clinical level) hoped to enter into an FM career. Those who did were more likely to be female, were slightly older, were more frequently married or living with partners, were typically born in Canada, and were more likely to have previous exposure to non-urban environments. The interest in research appears to be inversely related to the choice of FM.

No	Title	Researcher(s)	Year	Country	Findings
38	Determinants of choosing a career in family medicine	Ian Scott, Margot Gowans and Jim Boone	2011	Canada	In this study, having family medicine as a career choice on entry was the most important predictor of a student's ultimate career choice and interest in family medicine increased during the course of medical school, with switchers to family medicine accounting for 48.0% of the group of students applying for a family medicine residency.
39	Factors influencing medical students' choice of family medicine: effects of rural versus urban background.	Gill, Harbir. McLeod, Scott. Duerksen, Kimberley. Szafran, Olga.	2012	Canada	Medical students who prefer family medicine as a career choice appear to be influenced by a different set of factors than those who prefer other specialties. Being female; being older; having previously lived in a rural location; placing importance on continuity of care; desire for a shorter residency; and influence of family, friends, or community are associated with medical students preferring family medicine. Some differences in factors influencing career choice exist between medical students from rural versus urban backgrounds.
40	Exploring professional identification and reputation of family medicine among medical	Rodriguez, Charo. Tellier, Pierre-Paul. Belanger, Emmanuelle.	2012	Canada	Those students who seemed to better identify with a family medicine career path were characterised by feeling comfortable with the broad scope of general medical knowledge, and with requesting a second opinion, by valuing the possibility of a

No	Title	Researcher(s)	Year	Country	Findings
	students: a Canadian case study.				diversified profile of practice, and holding strong humanistic values, as well as by being more concerned about lifestyle issues
41	Influence of personality and learning styles in the choice of medical specialty	Bitran, Marcela; Zúñiga, Denisse; Lafuente, Monserrat; Viviani, Paola; Mena, Beltrán	2005	Chile	Surgical specialties concentrated a larger proportion of extraverted, intuitive and structured doctors, whereas in Pediatrics and Internal Medicine predominated intuitive and people-oriented MD's. Primary Care concentrated individuals with introverted, intuitive and flexible attitudes. Convergent learners (interested in problem-solving) preferred Surgery and Primary Care whereas Assimilator learners (abstract-reflexive) chose more frequently Internal Medicine, Pediatrics and Psychiatry. According to their personality and learning style, graduates tend to self-select into different medical specialties
42	The perceptions of a GP's work among fifth-year medical students in Helsinki, Finland.	Kuikka, L. Nevalainen, M K. Sjoberg, L. Salokekkila, P. Karppinen, H. Torppa, M. Liira, H. Eriksson, J. Pitkala,	2012	Finland	Among the students, 76% considered the most attractive feature in the GP's work to be that it is versatile and challenging. The least attractive features included: too hasty, pressing work, too lonely work, and too many non-medical problems. The majority of the students considered the main aim of a GP's work as to identify serious diseases/disorders in order to refer those patients for specialized care (82%). Treatment of chronic diseases is an

No	Title	Researcher(s)	Year	Country	Findings
		K H.			important responsibility of a GP's work according to 63% of the students. Only 38% considered health promotion to be an important aim
43	Young physicians' view on factors that increase the attractiveness of general practice	Buddeberg-Fischer, B. Stamm, M. Buddeberg, C. Klaghofer, R.	2008	Germany	Family medicine is still assessed as an interesting field, however, the conditions of work as a family physician/general practitioner have a deterrent effect on young physicians.
44	[What factors aid in the recruitment of general practice as a career? An enquiry by interview of general practitioners]	Natanzon, Iris. Ose, D. Szecsenyi, J. Joos, S.	2010	Germany	Various approaches aimed at different target groups can be derived from these identified factors: the government providing general and occupational conditions that would relieve GPs of excessive bureaucracy; universities and medical associations meeting the challenge by improving undergraduate and postgraduate education in general practice; and GPs themselves giving a more self-confident presentation of general practice.
45	Becoming a general practitioner - Which factors have most impact	Kathrin Kiolbassa, Antje Miksch, and Katja Goetz	2011	Germany	This study confirms that future GPs differ from students intending to choose other specialties particularly in terms of patient-orientation and individual aspects such as personal ambition, future perspective

No	Title	Researcher(s)	Year	Country	Findings
	on career choice of medical students?				and work-life balance. Improving job-conditions in terms of family compatibility and work-life balance could help to increase the attractiveness of general practice
46	"General Practice is a great job anyway" - a qualitative study with vocational trainees	Steinhauser, Jost. Paulus, Jan. Roos, Marco. Peters-Klimm, Frank. Ledig, Thomas. Szecsenyi, Joachim. Joos, Stefanie.	2011	Germany	A package of measures is necessary to improve aspects of the vocational training but also general conditions for the career of a general practitioner
47	General Practice as a career choice among undergraduate medical students in Greece	Anargiros Mariolis, Constantinos Mihas, Alevizos Alevizos, Vasilis Gizlis, Theodoros Mariolis, Konstantinos Marayiannis, Yiannis Tountas,	2007	Greece	Despite the great needs, GP specialty is currently not a career option among undergraduate students of the greater Medical University in Greece and is still held in low esteem. The status of undergraduate training in general practice/family medicine seems to be one of the most important factors that influence physician career choices regarding primary care specialties.

No	Title	Researcher(s)	Year	Country	Findings
		Christodoulos Stefanadis, Anastas Philalithis and George Creatsas			
48	Choosing primary care? Influences of medical school curricula on career pathways.	Tandeter, H. Granek-Catarivas, M.	2001	Israel	Since students are greatly influenced by the cultures of the institutions in which they train, the negative attitude of a university towards family medicine may negatively affect the number of students going into this specialty. Examples from Israeli faculties are presented.
49	Specialty preference of medical students at one Israeli university: family medicine versus other specialties	Liviatan, Nir. Zemah, Galit Menachem. Reis, Shmuel. Karkabi, Khaled. Dahan, Rachel.	2008	Israel	Research findings show that gender (female), marital status (non-single), religion (Jewish) and lack of previous health-related experience, predicted family medicine choice. The students that chose family medicine were more concerned with medical lifestyle, patients' population characteristics and societal commitment.
50	Critical factors in career decision making for women medical	Lawrence, Joanna. Poole, Phillippa. Diener, Scott	2003	New Zealand	Most women were satisfied with their careers. The principal component analysis of the influencing factors identified four distinct factors important in career choice - interest, flexibility, women

No	Title	Researcher(s)	Year	Country	Findings
	graduates.				friendliness and job security, although the first two of these were rated more highly than the others.
51	The new rural health curriculum at Dunedin School of Medicine: how has it influenced the attitudes of medical students to a career in rural general practice?.	Williamson, Martyn. Gormley, Andrew. Bills, Janne. Farry, Pat.	2003	New Zealand	Students who identify their origins as rural are more likely to have a positive attitude towards rural general practice as a career choice. However, a rural curriculum can produce attitude changes in students, irrespective of origin.
52	Student debt amongst junior doctors in New Zealand; part 2: effects on intentions and workforce.	Moore, James. Gale, Jesse. Dew, Kevin. Simmers, Don.	2006	New Zealand	Forty-three percent of respondents stated that their student debt had influenced their intended specialty, and only 9% of respondents indicated their intention to pursue a career in general practice
53	Career choices of New Zealand junior doctors.	Zarkovic, Andrea. Child, Stephen. Naden, Gill	2006	New Zealand	Career aspirations of New Zealand junior doctors were similar to those reported by overseas studies.

No	Title	Researcher(s)	Year	Country	Findings
54	Medical student selection in New Zealand: looking to the future	Poole, Phillippa J. Moriarty, Helen J. Wearn, Andy M. Wilkinson, Tim J. Weller, Jennifer M	2009	New Zealand	The strongest evidence between selection and future practice exists for students from rural backgrounds - they are more likely to practice in rural areas and to enter general practice.
55	Increasing medical student interest in general practice in New Zealand: where to from here?.	Poole, Phillippa. Bourke, David. Shulruf, Boaz.	2010	New Zealand	Auckland medical students have levels of interest in general practice comparable with international data.
56	Does the positive influence of na undergraduate rural placement persist into postgraduate years?.	Williamson, M I. Wilson, R. McKechnie, R. Ross, J	2012	New Zealand	This study adds to the evidence by showing that positive effects from a rural undergraduate placement persist into the postgraduate years, although that in isolation is unlikely to result in a significant workforce effect.
57	Motivation for medical school: the relationship to gender and specialty	Vaglum, P. Wiers-Jenssen, J. Ekeberg, O.	1999	Norway	Person orientated' and 'natural science orientated' motives exerted the strongest influence on specialty preferences. Those who preferred family medicine were more person orientated and less

No	Title	Researcher(s)	Year	Country	Findings
	preferences in a nationwide sample				natural science orientated, while those who preferred internal medicine were more natural science orientated
58	Gender similarities in doctors' preferences--and gender differences in final specialisation.	Gjerberg, Elisabeth.	2002	Norway	The findings clearly contradict the idea that the low proportion of women in male dominated areas of medicine reflects women's lack of interest in specialities like surgery and internal medicine.
59	Career choice and place of graduation among physicians in Norway	Stian Langeland Wesnes, Olaf Aasland, and Anders Baerheim	2012	Norway	The physician's place of graduation appears to be associated with career choice. The universities' total contribution in pre-graduate general practice education may be associated with future GP career choice.
60	Does an activity based remuneration system attract young doctors to general practice?.	Abelsen, Birgit. Olsen, Jan Abel.	2012	Norway	This study suggests that an existing remuneration mechanism has a selection effect on who would like to become a GP. Those most attracted are income motivated men. Those deterred are risk averse, and less happy with a high work pace.
61	Determinants of primary care specialty choice	Pawełczyk A, Pawełczyk T, Bielecki J.	2007	Poland	There is a negative perception of family medicine among Polish students and doctors because of its long work hours and less time for family, insufficient diagnostic possibilities and monotony. It is chosen because of lack of other possibilities, difficulties in

No	Title	Researcher(s)	Year	Country	Findings
					employment and opportunity to become 'a specialist' in short time.
62	GENERAL PRACTICE AND FAMILY MEDICINE VOCATIONAL TRAINING The Specialty Internship Doctor's Profile, in Portugal	Dina Gaspar	2010	Portugal	The specialty was the first option of 78.9% of trainees, regardles of their profile
63	PROFESSIONAL MOTIVATION AND FAMILY MEDICINE RESIDENCY A National Study	Dina GASPAR, Saul Neves de JESUS, José Pestana CRUZ	2011	Portugal	The findings of this study suggest that medical graduates, studied in this research, were globally motivated for practising in a Family Medicine context, contradicting the overall perception of a physicians' declined interest for this specialty.
64	Influence of gender in vocational preferences and personality traits in Medical students	Monleon-Moscardo, P J. Rojo-Moreno, J. Monleon-Moscardo, A. Garcia-Merita, M	2003	Spain	Gender has a significant influence on the medical student both in their vocational preferences as well as their personality profile.

No	Title	Researcher(s)	Year	Country	Findings
		L. Alonso-Fonfria, A. Valdemoro-Garcia, C.			
65	The reputation and professional identity of family medicine practice according to medical students: a Spanish case study.	Lopez-Roig, Sofia. Pastor, Maria Angeles. Rodriguez, Charo	2010	Spain	Family medicine appears to be largely devalued as a professional activity, among medical students, being viewed as a monotonous and non-technological medical practice with no intellectual challenge. Such a negative view, which already appears in early stages of medical training, leads to a lack of identification with this medical practice by students.
66	Few gender differences in specialty preferences and motivational factors: a cross-sectional Swedish study on last-year medical students.	Diderichsen, Saima. Johansson, Eva E. Verdonk, Petra. Lagro-Janssen, Toine. Hamberg, Katarina.	2013	Sweden	The gender similarities in the medical students' specialty preferences are striking and contrast with research from other Western countries where male and female students show more differences in career aspirations
67	Swiss residents' speciality choices--impact of gender,	Buddeberg-Fischer, Barbara. Klaghofer, Richard. Abel,	2006	Switzerland	Gender had the greatest impact on specialty and career choice, but there were also two other relevant influencing factors, namely career motivation and life goals.

No	Title	Researcher(s)	Year	Country	Findings
	personality traits, career motivation and life goals.	Thomas. Buddeberg, Claus.			
68	Residents' reasons for specialty choice: influence of gender, time, patient and career	Klazine van der Horst, Michael Siegrist, Pascale Orlow & Max Giger	2010	Switzerland	This study showed that reasons for specialty choice differ according to gender, year of graduation and specialty.
69	Are professional attitudes related to gender and medical specialty?	Batenburg, V. Smal, J A. Lodder, A. de Melker, R A.	1999	The Netherlands	Professional attitudes, in particular patient-centredness, seem to be related to specialty preference in the final year of graduate medical training and specialty as a career choice
70	Career preferences and the work-family balance in medicine: gender differences among medical specialists.	Heiliger, P J. Hingstman, L	2000	The Netherlands	This study concluded that individual preferences in career paths are very diverse
71	Can self-declared personal values be used to identify those with	each, Renee A. Eva, Kevin W. Reiter, Harold I.	2008	The Netherlands	Despite apparent differences in the literature between those interested in primary care and those interested in other specialist careers, the differences are small and do not correlate with career

No	Title	Researcher(s)	Year	Country	Findings
	family medicine career aspirations?				aspirations in a way that could inform admissions decisions.
72	Shortage in general practice despite the feminisation of the medical workforce: a seeming paradox? A cohort study.	Maiorova, Tanja. Stevens, Fred. van der Zee, Jouke. Boode, Beppie. Scherpbier, Albert.	2008	The Netherlands	Gender 'as such' appeared not to be a distinctive predictor of specialty choice. It is students' attitudes towards GP work and preferred patient category that determine the career choice in general practice. However, more male students were positively influenced by the GP clerkship than female students.
73	Are new medical students' specialty preferences gendered? Related motivational factors at a Dutch medical school.	van Tongeren-Alers, Margret. van Esch, Maartje. Verdonk, Petra	2011	The Netherlands	Forty percent of the medical students reported no specialty preference yet. Taken together, female medical students preferred pediatrics and wished to combine work and care, whereas male students opted for surgery and valued career opportunities.
74	Gender differences in medical students' motives and career choice.	Heiligers, Phil J M.	2012	The Netherlands	First stage students are influenced by life-style and intrinsic motives in their choice of general practice. For second stage students, the results show influences of life-style motives next to profession-related motives on both moments of choice.

No	Title	Researcher(s)	Year	Country	Findings
75	Perceptions of family medicine and career choice among first year medical students: a cross-sectional survey in a Turkish medical school.	Ozcakir, Alis. Yaphe, John. Ercan, Ilker.	2007	Turkey	Students were positive about their choice of medicine as a career but had negative opinions of general practice. Female students were more positive in this respect.
76	Reasons for doctors' career choice and change of choice.	Parkhouse, J. Ellin, D J.	1988	United Kingdom	Great importance was attached to self evaluation of aptitude and ability as a factor in determining the choice of career and also to awareness of promotion prospects and difficulties.
77	Women doctors' career choice and commitment to medicine: implications for general practice.	R E Wakeford and V J Warren	1989	United Kingdom	The findings show a high recent and planned participation rate in medical practice, especially general practice, among these women graduates and no involuntary unemployment
78	Factors influencing the career choices of general practitioner trainees in North West Thames Regional Health	R Beardow, K Cheung, and W M Styles	1993	United Kingdom	Specific factors identified as important when choosing a practice included a good working relationship with partners and staff, the presence of a practice nurse and practice manager, attached health authority staff, opportunities for postgraduate education, and good relationships with hospitals.

No	Title	Researcher(s)	Year	Country	Findings
	Authority.				
79	General practitioner registrars' views about a career in general practice.	Rowsell, R. Morgan, M. Sarangi, J.	1995	United Kingdom	Although registrars were interested in general practice as a career they had many concerns and expressed uncertainties.
80	Career preferences of medical students: influence of a new four-week attachment in general practice.	Morrison, J M. Murray, T S.	1996	United Kingdom	The general practice attachment influenced students, especially males, towards a career in general practice, but this effect was transient.
81	Ending up a GP': a qualitative study of junior doctors' perceptions of general practice as a career.	Petchey, R. Williams, J. Baker, M	1997	United Kingdom	Junior doctors' perceptions of general practice are expressions of a hospital-centric culture. Criteria for career choice are diffuse and complex. The compromise between intrinsic satisfaction and lifestyle may be significant for GP morale.

No	Title	Researcher(s)	Year	Country	Findings
82	Graduate status and age at entry to medical school as predictors of doctors' choice of long-term career.	Lambert, T W. Goldacre, M J. Davidson, J M. Parkhouse, J	2001	United Kingdom	There was no evidence of an association between age at entry to medical school and choice of eventual career. Graduates at entry to medical school were a little more likely than non-graduates to choose general practice but the relationship was not a strong one. In these respects, changing the entry profile of medical students is unlikely to result in major shifts of career choice towards general practice.
83	Graduate status and age at entry to medical school as predictors of doctors' choice of long-term caree	Lambert, T W. Goldacre, M J. Davidson, J M. Parkhouse, J.	2001	United Kingdom	There was no evidence of an association between age at entry to medical school and choiceof eventual career. Graduates at entry to medical school were a little more likely than non-graduates to choose general practice but the relationship was not a strong one.
84	GP recruitment and retention: a qualitative analysis of doctors' comments about training for and working in general practice.	Julie Evans,Trevor Lambert, and Michael Goldacre	2002	United Kingdom	A cultural change amongst medical educationalists is needed to promote general practice as a career choice that is equally attractive as hospital practice. The reluctance of newly qualified GPs to enter principalships, and the increasing demand from experienced GPs for less-than-full-time work, indicates a need for a greater variety of contractual arrangements to reflect doctors' desires for more

No	Title	Researcher(s)	Year	Country	Findings
					flexible patterns of working in general practice.
85	Recruitment of UK-trained doctors into general practice: findings from national cohort studies.	Lambert, Trevor W. Evans, Julie. Goldacre, Michael J.	2002	United Kingdom	Patterns of entry into and commitment to UK general practice are changing. Fewer young doctors are choosing and entering general practice and early commitment to full-time principalships is falling. The 1996 cohort, however, took an encouragingly positive view of the attractiveness of careers in general practice.
86	Attitude of medical students towards general practice and general practitioners.	Emma Henderson, Anita Berlin, and Jon Fuller	2002	United Kingdom	Medical students end their undergraduate years with a more positive attitude towards general practice than has been reported elsewhere recently. This may be partially explained by the greater contact with GPs and suggests that efforts by medical schools to ensure a more balanced, community-based curriculum promotes positive attitudes to general practice
87	Doctors' reasons for rejecting initial choices of specialties as long-term careers.	Lambert, Trevor W. Davidson, Jean M. Evans, Julie. Goldacre, Michael J.	2003	United Kingdom	It is unlikely that much of the decline in entry to GP is attributable to rejection of GP by doctors who initially chose it. The decline must therefore represent an increase in the number of doctors who had never seriously considered it as a long-term career choice.

No	Title	Researcher(s)	Year	Country	Findings
88	Attachment theory in health care: the influence of relationship style on medical students' specialty choice.	Ciechanowski PS ; Russo JE ; Katon WJ ; Walker EA	2004	United Kingdom	Compared to those with a secure relationship style, students with a cautious style and students with a self-reliant style were more likely to choose non-primary over primary care.
89	UK doctors move towards general practice and flexible working	M Brettingham	2005	United Kingdom	Full text not available
90	Using questionnaires to determine whether medical graduates' career choice is determined by undergraduate or postgraduate experiences	Watmough, Simon. Taylor, David. Ryland, Ida.	2007	United Kingdom	Graduates chose their career pathway for a number of reasons including specialties that would secure home-work balance, disenchantment with training programs, and work experiences post graduation rather than their undergraduate clinical attachments.

No	Title	Researcher(s)	Year	Country	Findings
91	Behavioral Exploration of Career and Specialty Choice in Medical Students	Borges, Nicole J	2007	United Kingdom	First-year medical students' medical career development and medical specialty decisions were studied prior to and after the students engaged in a field-based course that provided experiential and exploratory opportunities relating to physician career development and medical specialty choice. The current study sought to determine whether there would be a change in students' medical career development and their specialty decision making after completing the ACE course. Findings suggest that the students had not progressed in their medical career development and that more uncertainty existed among students regarding how to go about choosing a specialty, and specialty choice in general, after completing the course
92	Career progression and destinations, comparing men and women in the NHS: postal questionnaire surveys.	Taylor, Kathryn S. Lambert, Trevor W. Goldacre, Michael J.	2009	United Kingdom	Women not progressing as far and as fast as men was, generally, a reflection of not having always worked full time rather than their sex. The findings suggest that women do not generally encounter direct discrimination; however, the possibility that indirect discrimination, such as lack of opportunities for part time work, has influenced choice of specialty cannot be ruled out.

No	Title	Researcher(s)	Year	Country	Findings
93	Overcoming the pull factor of convenient urban living - Perceptions of rural general practice placements.	Deaville, Jennifer. Grant, Andrew.	2011	United Kingdom	It is important to address students' concerns associated with the practicalities of going on a rural placement. Rural practice placements need to be raised earlier in the undergraduate curriculum.
94	Motivation and satisfaction in GP training: a UK cross-sectional survey.	Watson, Jessica. Humphrey, Alison. Peters-Klimm, Frank. Hamilton, William.	2011	United Kingdom	The most important reason for both women and men choosing general practice as a career in the UK is its compatibility with family life
95	Trends in doctors' early career choices for general practice in the UK: longitudinal questionnaire surveys	Trevor Lambert and Michael Goldacre	2011	United Kingdom	The percentage of doctors, in their first post-qualification year, whose first choice of eventual career was general practice has not changed much in recent years.. At years 1 and 3, the overall first choice for general practice is considerably lower than the required 50%, but varies substantially by medical school.
96	The impact of general practice attachments on foundation doctors: achieving the goals of	Firth, Adam. Wass, Val.	2011	United Kingdom	Undergraduate exposure and secondary care bias in training had a significant negative impact on trainees' perceptions of general practice.

No	Title	Researcher(s)	Year	Country	Findings
	Modernising Medical Careers.				
97	When and why do doctors decide to become general practitioners? Implications for recruitment into UK general practice specialty training.	Irish, Bill. Lake, Jonathan.	2011	United Kingdom	Most applicants reported decision making after completing undergraduate training citing variety, continuity of care and work-life balance as their main drivers for a career in general practice
98	What challenges hamper Kenyan family physicians in pursuing their family medicine mandate? A qualitative study among family physicians and their colleagues	van der Voort, Chiel T M. van Kasteren, Geraldine. Chege, Patrick. Dinant, Geert-Jan	2012	United Kingdom	Challenges faced by family physicians were being posted in situations where they are regarded as just another type of specialist, lack of awareness of the roles of family physicians among colleagues, lack of time, lack of funds and inadequate training.

No	Title	Researcher(s)	Year	Country	Findings
99	Reasons why doctors choose or reject careers in general practice: national surveys	Trevor Lambert, Raph Goldacre and Michael J Goldacre	2012	United Kingdom	The shortfall of doctors wanting a career in general practice is not accounted for by doctors considering and rejecting it. There are very distinctive factors that influence choice for, and rejection of, general practice.
100	An evaluation of the impact of an increase in community-based medical undergraduate education in a UK medical school	Watmough, Simon	2012	United Kingdom	An increase in exposure to community-based undergraduate medical education can change the way graduates perceive and understand general practice
101	Doctors who considered but did not pursue specific clinical specialties as careers: questionnaire surveys.	Goldacre, Michael J. Goldacre, Raph. Lambert, Trevor W.	2012	United Kingdom	There is considerable diversity between doctors in their reasons for finding specialties attractive or unattractive. This underlines the importance of recruitment strategies to medical school that recognize diversity of students' interests and aptitudes.
102	GPs' job satisfaction: doctors who chose general practice early or	Lambert T, Smith F, Goldacre M.	2013	United Kingdom	Job satisfaction levels were generally high among the late choosers as well as the early choosers. On this evidence, most doctors who turn to general practice, after preferring another specialty in their

No	Title	Researcher(s)	Year	Country	Findings
	late.				early career, are likely to have a satisfying career.
103	New results relating the Myers-Briggs Type Indicator and medical specialty choice.	Charles Friedman, Lisa Slatt	1988	United States of America	The MBTI taken in the first year of medical school was statistically predictive of specialty choice in the first postgraduate year.
104	The relationship between medical student career choice and a required third-year family practice clerkship.	Rabinowitz, H K.	1988	United States of America	The results showed that students who attended medical schools with a required third-year clerkship in family practice were significantly more likely to enter family practice residency training than students who attended schools with a required fourth-year clerkship, or who attended a school with no required family practice clerkship
105	Gender: measuring its influence on senior medical students' "professional personality" and career choice	John Merrill Richard Lorimor Lila Laux John Thomby Carlos Vallbona	1994	United States of America	A positive effect of gender on “professional personality” and choice of specialty was observed

No	Title	Researcher(s)	Year	Country	Findings
106	The effect of a required third-year family medicine clerkship on medical students' attitudes: value indoctrination and value clarification.	Senf JH, Campos-Outcalt D.	1995	United States of America	The students' attitudes about family medicine changed during the clerkship to become more consistent with their postclerkship specialty preferences. In addition, more students preferred family medicine after the clerkship than before it. These results reflect both a value clarification process and a value indoctrination effect. The discrepancy between postclerkship specialty preferences and later match data indicates that the indoctrination effect and clarification process continue into the fourth year.
107	Required first-year generalist clinical experience courses and their relationship to career choice: the critical effect of family medicine involvement.	Mengel, M B. Davis, A B.	1995	United States of America	Family physicians are involved to some extent in the great majority of RFGCE courses. Such involvement is associated with an increase in the number of medical students selecting a family practice career upon graduation from medical school.
108	Personal values of exemplary family physicians: implications	Eliason, B C. Schubot, D B.	1995	United States of America	Of the 10 value types, Benevolence was rated the most important and Power the least important by exemplary family physicians, and both value types also correlated, positively and negatively,

No	Title	Researcher(s)	Year	Country	Findings
	for professional satisfaction in family medicine				respectively, with their practice satisfaction. These results have implications for the selection, training, and career satisfaction of generalist physicians.
109	Determinants of primary care specialty choice: a non-statistical meta-analysis of the literature	land, C J; Meurer, L N; Maldonado, G	1995	United States of America	Student characteristics associated with primary care career choice are: being female, older, and married; having a broad undergraduate background; having non-physician parents; having relatively low income expectations; being interested in diverse patients and health problems; and having less interest in prestige, high technology, and surgery. Other traits, such as value orientation, personality, or life situation, yet to be reliably measured, may actually be responsible for some of these associations. Two curricular experiences are associated with increases in the numbers of students choosing primary care: required family practice clerkships and longitudinal primary care experiences.
110	Prospective study of how students' humanism and psychosocial beliefs relate to specialty	Louisa Coutts, James H. Bray, Suzanne Moore, John Rogers	1997	United States of America	The students who matched to primary care specialties had significantly higher mean humanism scores than did the students who matched to surgery or support specialties.

No	Title	Researcher(s)	Year	Country	Findings
	matching				
111	Psychosocial beliefs of medical students planning to specialize in family medicine	Markham, F W. Diamond, J J.	1997	United States of America	Female students had a significantly greater psychosocial orientation than their male peers, but there were no significant differences between students planning residencies in family medicine and those selecting other residencies. The greater orientation of family doctors would appear to be a product of further training and experience either during residency or later during the actual practice of family medicine
112	A systematic analysis of how medical school characteristics relate to graduates' choices of primary care specialties	Janet H. Senf, Doug Campos-Outcalt, Arleen Watkins, Stan Bastacky	1997	United States of America	This study suggests that the most effetive way of increasing the number of physicians with generalist practises is to increase the number of students interested in a family medicine career at matriculation.
113	What predicts medical student career choice?	Newton, D A. Grayson, M S. Whitley, T W.	1998	United States of America	Variables positively correlated with primary care career choice were related to working with people and marital status. Negatively correlated variables were related to income and prestige.

No	Title	Researcher(s)	Year	Country	Findings
114	Personality type and medical specialty choice.	Wallick, M M. Cambre, K M. Randall, H M	1999	United States of America	In this study, the authors explore possible association between the graduates' personality type and their chosen career, along with possible type differences of those graduates selecting primary care and those choosing non-primary care specialties.
115	Educational and career outcomes of an internal medicine preceptorship for first-year medical students	Elnicki, D M. Halbritter, K A. Antonelli, M A. Linger, B	1999	United States of America	The PIM course is an intervention, early in students' careers, which appears to benefit them academically and increase their interest in internal medicine as a career.
116	Myers-Briggs Type and Medical Specialty Choice: A New Look at an Old Question	Nancy A. Stilwell , Mollie M. Wallick , Sara E. Thal & Joseph A. Burleson	2000	United States of America	Women are more likely than men to choose primary care specialties, as are those with preference for introversion and feeling. Feeling types choose Family Medicine significantly more often than thinking types.
117	Can a 3-day preceptorship change first-year medical students' opinions about living and working in	Lynch, D C. Willis, S E.	2000	United States of America	Brief exposure to rural medicine early in the curriculum appears to have little effect on variables that might precede practice location decisions.

No	Title	Researcher(s)	Year	Country	Findings
	small towns?				
118	Personality and Medical Specialty Choice: Technique Orientation versus People Orientation	Nicole J. Borges, William R. Osmon	2001	United States of America	A stepwise discriminant analysis showed that, of the 16 personality factors, Rule-Consciousness and Abstractedness had the greatest power to discriminate among general surgeons, anaesthesiologists, and family practitioners. The global factor of Tough-Mindedness had the greatest power to discriminate among general surgeons, anaesthesiologists, and family practitioners. These findings coincided with using differences between person-orientation and technique-orientation to map medical specialties
119	EMPATHY IN MEDICAL STUDENTS: ASSESSMENT AND RELATIONSHIP TO SPECIALTY CHOICE	Beth Anne Bailey	2001	United States of America	There were significant differences in empathy measures between medical students indicating a preference for a patient-oriented specialty and students planning a career in a procedure-oriented specialty. Medical students who scored higher on all empathy measures were more likely to prefer a specialty that requires extensive and prolonged contact with patients. Medical students who scored lower on empathy measures were more likely to select specialties that are procedure-oriented, consisting o f relatively brief

No	Title	Researcher(s)	Year	Country	Findings
					patient encounters
120	Effect of generalist preceptor specialty in a third-year clerkship on career choice.	Gazewood, John D. Owen, John. Rollins, Lisa K.	2002	United States of America	There was no significant relationship between preceptor assignment and students' generalist career choice. Students assigned to general internal medicine preceptors were not more likely to choose careers in general internal medicine, nor were students assigned to family medicine preceptors more likely to select careers in family practice.
121	Effect of generalist preceptor specialty in a third-year clerkship on career choice.	Gazewood, John D. Owen, John. Rollins, Lisa K.	2002	United States of America	This study indicates that the type of generalist experience received during the third year did not affect students' choice of a generalist career, nor did it influence their career choice between the generalist specialties.

No	Title	Researcher(s)	Year	Country	Findings
122	Factors Related to the Choice of Family Medicine: A Reassessment and Literature Review	Janet H. Senf, Doug Campos-Outcalt, Randa Kutob	2003	United States of America	Rural background related positively and parents' socioeconomic status relates negatively to choice of family medicine. Career intentions at entry to medical school predict specialty choice. Students who believe primary care is important, have low income expectations, and do not plan a research career are more likely to choose family medicine. The school characteristic related to choice of family medicine is public ownership. Large programs to increase numbers entering primary care seem effective. Required family medicine time in clinical years is related to higher numbers selecting family medicine. Faculty role models serve both as positive and negative influences. Students rejecting family medicine are concerned about prestige, low income, and breadth of knowledge required. Students planning on a career in a disadvantaged or rural area are more likely to enter family medicine.
123	Variation in predictors of primary care career choice by year and stage of training.	Connelly, Maureen T. Sullivan, Amy M. Peters, Antoinette S. Clark-Chiarelli,	2003	United States of America	The effect of peer encouragement and role models on career choice differed for students and residents and, in the case of residents, by year of training, suggesting that interventions to increase the primary care workforce should be tailored to stage of training.

No	Title	Researcher(s)	Year	Country	Findings
		Nancy. Zotov, Natasha. Martin, Nina. Simon, Steven R. Singer, Judith D. Block, Susan D			
124	Declining interest in family medicine: perspectives of department heads and faculty	Kutob, Randa M. Senf, Janet H. Campos-Outcalt, Doug	**2003**	United States of America	This study demonstrates the importance of upper-level institutional support on family practice specialty choice. It also highlights a need for further examination of the specialty's relationship to research.
125	Understanding Primary Care Residency Choices: A Test of Selected Variables in the Bland-Meurer Model	Lawson, Sonya R.; Hoban, J Dennis; Mazmanian, Paul E.	2004	United States of America	Variables predictive of primary care residency choice were gender; student ratings of psychiatry, surgery, and internal medicine clerkships; not having participated in a research project in medical school; attitudes toward “the changing health care system on physicians” and “access to medical care”; and planned practice in a medically underserved area.
126	Which primary care specialty? Factors that	Senf, Janet H. Kutob, Randa. Campos-	2004	United States of America	For family physicians, the most important factor was patient relationships, and the second most important was wanting an

No	Title	Researcher(s)	Year	Country	Findings
	relate to a choice of family medicine, internal medicine, combined internal medicine-pediatrics, or pediatrics.	Outcalt, Dou			approach to the practice of medicine similar to that of family physicians
127	A comparison of primary care graduates from schools with increasing production of family physicians to those from schools with decreasing production.	Campos-Outcalt, Doug. Senf, Janet. Kutob, Randa.	2004	United States of America	Between 1997 and 1999, at schools with increasing proportions of graduates choosing family medicine, there were significant increases in the proportion of graduates who (1). had entered medical school with a specialty preference of family medicine, (2). spent their required family medicine clerkship at two or more sites, (3). ranked the competence of family medicine faculty highly, (4). reported the faculty member they most wanted to be like was a family physician, and (5). experienced clinical rotations in both family medicine and primary care
128	The Variable Influence of Lifestyle and Income on Medical Students' Career Specialty Choices: Data	Newton, Dale A. MD; Grayson, Martha S. MD; Thompson, Lori Foster	2005	United States of America	Lifestyle and income have become more important to medical students in their career choice, and the relative influence of these factors varies considerably between specialties. . Contrary to previous reports, the students' responses indicate they perceived

No	Title	Researcher(s)	Year	Country	Findings
	from Two U.S. Medical Schools, 1998–2004				the primary care specialties as lifestyle intermediate compared to other specialties
129	Family medicine specialty choice and interest in research	Senf, Janet H. Campos-Outcalt, Doug. Kutob, Randa.	2005	United States of America	Measures of research activity or interest were available on matriculation during medical school and at graduation. All were inversely related to interest in family medicine. Students interested in family medicine were less likely to have selected the field of medicine because of research interests, were less likely to have participated in a research project during medical school, and at graduation were less likely to plan on a career involving research.
130	Rekindling student interest in generalist careers	Schwartz, MD, WT Basco, MR Grey, JG Elmore, and A Rubenstein.	2005	United States of America	Graduate students are more likely to choose specialties that have shorter training programs
131	US Graduate Medical Education, 2004-2005: Trends in Primary Care Specialties	Sarah E. Brotherton, Paul H. Rockey, Sylvia I. Etze	2005	United States of America	An increasing proportion of physicians are pursuing subspecialty training, while the number in primary care specialties has levelled off. Trends suggest that the primary care medical workforce of the future will include more women

No	Title	Researcher(s)	Year	Country	Findings
132	Influences on medical student career choice: gender or generation?	Sanfey, Hilary A. Saalwachter-Schulman, Alison R. Nyhof-Young, Joyce M. Eidelson, Ben. Mann, Barry D.	2007	United States of America	Generation and gender are both important influences on career choices
133	Ability of prospective assessment of personality profiles to predict the practice specialty of medical students	Maron, Bradley A; Fein, Steven; Maron, Barry J; Hillel, Alexander T; El Baghdadi, Mariam M	2007	United States of America	In this study, we found evidence that certain personality traits, present even at the early juncture of exposure to medicine, were in fact associated with the ultimate decision to elect specialization in family practice and psychiatry. The personality traits associated with psychiatry and family practice intuitively correspond to results of prior reports and the perceptions and stereotypes traditionally attributed to practising physicians in those specialties.Compared with others, family medicine students scored particularly low in neuroticism . Students choosing family practice scored higher in agreeableness and conscientiousness than did those selecting other specialties, although these differences did not achieve statistical significance

No	Title	Researcher(s)	Year	Country	Findings
134	THE ROLE OF RELATIONSHIPS IN MEDICAL STUDENT SPECIALTY CHOICE	SANDRA S. LaBLANCE	2008	United States of America	The results of this study support the researcher's hypothesis that medical students rely on Others in a variety of ways for guidance in the process of determining the direction of their future careers
135	Emotional intelligence and medical specialty choice: findings from three empirical studies.	Borges, Nicole J; Stratton, Terry D; Wagner, Peggy J; Elam, Carol L;	2008	United States of America	Across all three studies - and using both classifications of specialty choice - no significant differences in EI were found between students entering primary care and non-primary care specialties.
136	Short report: factors that affect specialty choice and career plans of Wisconsin's medical students.	Knox, Kjersti E. Getzin, Anne. Bergum, Alison. McBride, Patrick. Rieselbach, Richard. Friedsam, Donna.	2008	United States of America	This study's results indicate that salary and years of training may have been overemphasized in understanding student career choice. The results of this survey may be useful for Wisconsin medical schools in order to sustain, support, and foster student interest in primary care.
137	The relationship between a statewide preceptorship program	Kubal, Victoria Stout. Zweifler, John. Hughes, Susan.	2010	United States of America	Preceptorship program participants were more likely than both nonparticipants and non-applicants to select a FM residency.

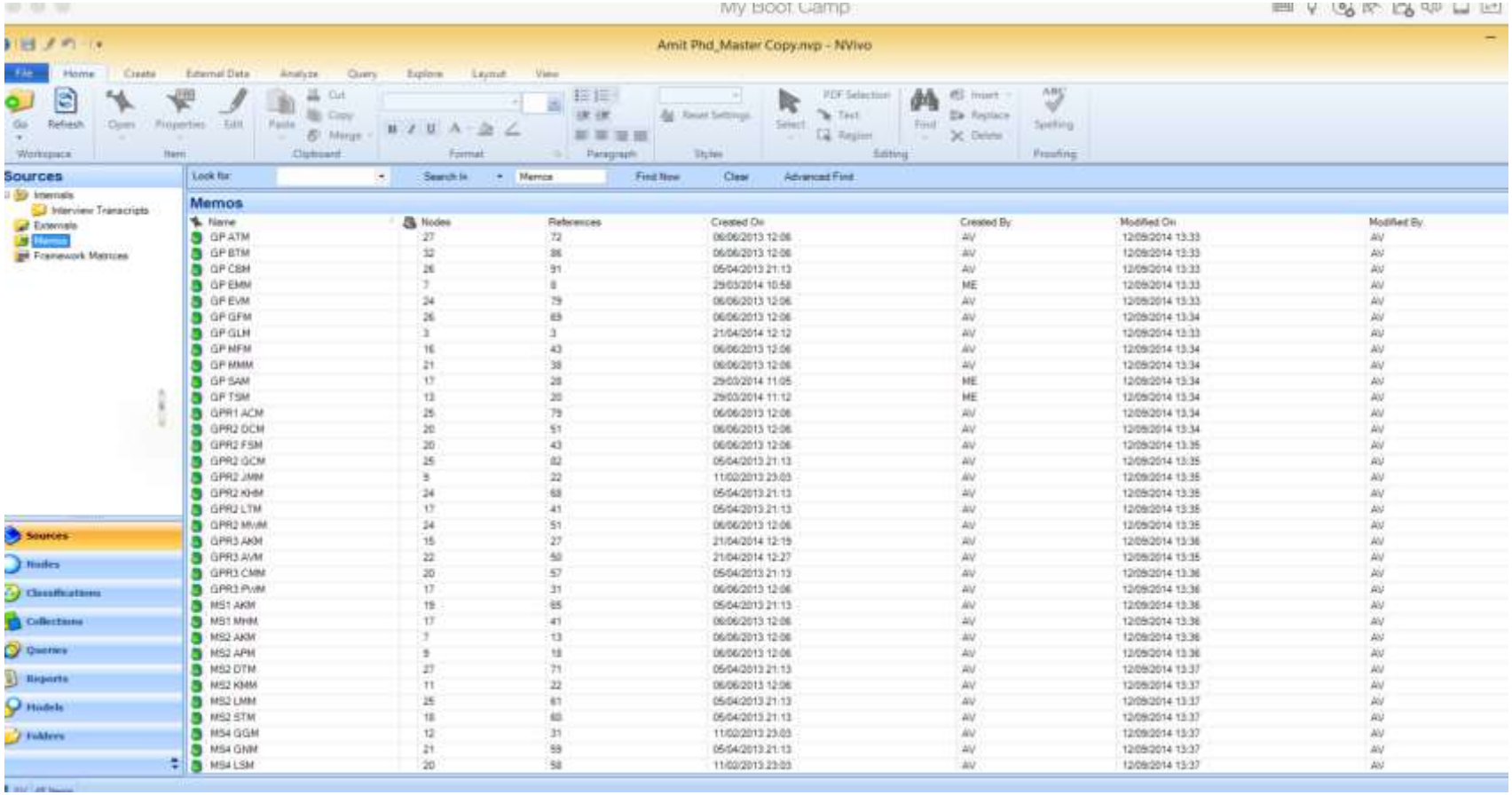
No	Title	Researcher(s)	Year	Country	Findings
	and family medicine residency selection.	Reilly, Jo Marie. Newman, Sandra.			
138	Entry of US Medical School Graduates Into Family Medicine Residencies: 2009–2010 and 3-year Summary	Amy L. McGaha, Gordon T. Schmittling, Ashley D. DeVilbiss Bieck, Philip W. Crosley, Perry A. Pugno	2010	United States of America	The United States needs a primary care physician-based health care delivery system. As fewer students choosing internal medicine plan to pursue careers in general medicine, it is critical for the nation's health that increased numbers of family physicians be trained in the US.
139	Changes in the knowledge of and attitudes toward family medicine after completing a primary care course.	Rabadan, Francisco Escobar. Hidalgo, Jesus Lopez-Torres	2010	United States of America	After completing the course, the students showed an improvement in their knowledge of and attitudes toward family medicine and primary care, but only a small percentage considered a career in family medicine as a first-choice option.
140	Influencing Residency Choice and Practice Location Through a Longitudinal Rural	Quinn, Kathleen J. , Kane, Kevin Y. ; Stevermer, James J. ; Webb, Weldon D.;	2011	United States of America	Rural Scholars were more than twice as likely to match into family medicine

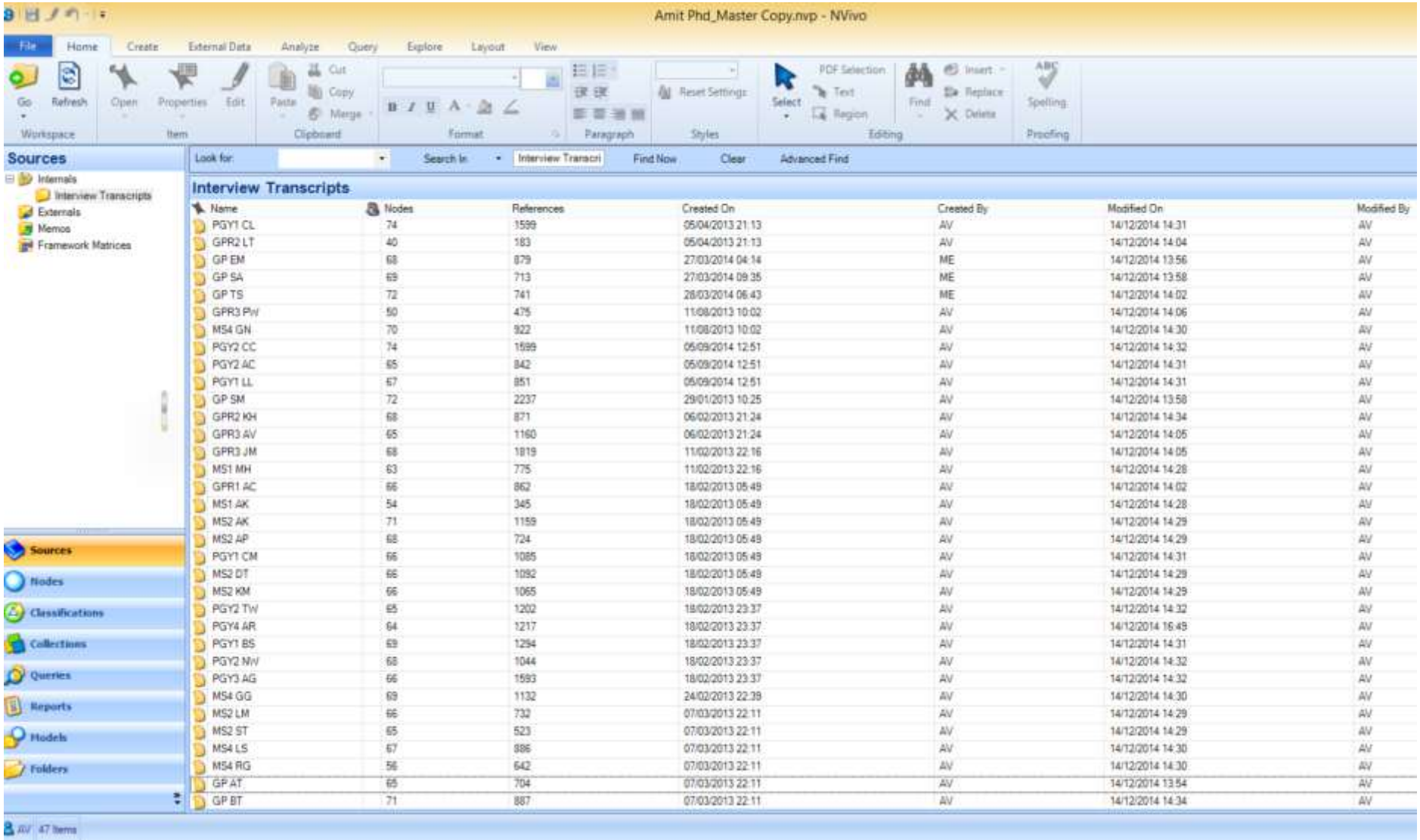
No	Title	Researcher(s)	Year	Country	Findings
	Pipeline Program	Porter, Jana L. ; Williamson, Harold A. Jr. ; Hosokawa, Michael C. EdD			
141	The Impact of Rural Training Experiences on Medical Students: A Critical Review	Barrett, Felicia A.; Lipsky, Martin S.; Nawal Lutfiyya, May	2011	United States of America	Although the evidence supports that rotations in rural settings influence practice site and career choice, it is not clear whether they reinforce pre-existing interest or have the ability to motivate previously uninterested students to consider careers in primary care or rural medicine.
142	Medical student characteristics predictive of intent for rural practice.	Royston, P J. Mathieson, K. Leafman, J. Ojan-Sheehan, O.	2012	United States of America	The results of this study support past research showing that medical students with a rural background and with spouses or significant others having a rural background are more likely to have intent for rural practice. This study also found that students' personality types may be correlated with intent to practice in a rural area.
143	Graduate Medical Education and Primary Care Workforce:	Peter J. Carek,Lars Peterson, Navkiran K. Shokar,	2012	United States of America	While numerous recommendations have recently been made, most responding FMRD feel that changing reimbursement for primary care

No	Title	Researcher(s)	Year	Country	Findings
	A CERA Study	Sharleen P. Johnson, Michele E. Knoll, Arch G. Mainous III			physicians would have the greatest impact on the workforce.
144	Is Exposure to a Student-run Clinic Associated With Future Primary Care Practice?	Sebastian T.C. Tong, Robert L. Phillips, Rebecca Berman	2012	United States of America	No association between having a student-run clinic in 2005 at a medical school and the proportion of its graduates who currently practice primary care was found. Since there are considerable limitations of na institution-based study, it may be useful to study specialty choice for individual students who participate in student-run clinics , given that prior research has shown longitudinal educational experience with undeserved population is associated with increased likelihood of choosing primary care careers.
145	"A Good Career Choice for Women": Female Medical Students' Mentoring Experiences: A Multi-Institutional Qualitative Study	Levine, Rachel B., Mechaber, Hilit F.; Reddy, Shalini T. ; Cayea, Danelle, Harrison, Rebecca A.	2013	United States of America	Gender appears to play a role in female medical students' expectations and experience with mentoring relationships and may influence their decision making around career planning.

No	Title	Researcher(s)	Year	Country	Findings
146	Payback time: the associations of debt and income with medical student career choice.	Grayson, Martha S. Newton, Dale A. Thompson, Lori F.	2013	United States of America	Debt and anticipated income are important concerns which may shape future supplies of PC doctors.

Appendix 2: Coded Memos & Interviews in QSR NVIVO® Software




Amit Phd_Master Copy.nvp - NVivo
File
Home
Create
External Data
Analyze
Query
Explore
Layout
View
Sources
Internals
Interview Transcripts
Externals
Memos
Framework Matrices
Look for:
Search In
Interview Transcri
Find Now
Clear
Advanced Find
Interview Transcripts
Name
Nodes
References
Created On
Created By
Modified On
Modified By
PGY1 CL 74 1599 05/04/2013 21:13 AV 14/12/2014 14:31 AV
GPR2 LT 40 183 05/04/2013 21:13 AV 14/12/2014 14:04 AV
GP EM 68 879 27/03/2014 04:14 ME 14/12/2014 13:56 AV
GP SA 69 713 27/03/2014 09:35 ME 14/12/2014 13:58 AV
GP TS 72 741 28/03/2014 06:43 ME 14/12/2014 14:02 AV
GPR3 PW 50 475 11/08/2013 10:02 AV 14/12/2014 14:06 AV
MS4 GN 70 922 11/08/2013 10:02 AV 14/12/2014 14:30 AV
PGY2 CC 74 1599 05/09/2014 12:51 AV 14/12/2014 14:32 AV
PGY2 AC 65 842 05/09/2014 12:51 AV 14/12/2014 14:31 AV
PGY1 LL 67 851 05/09/2014 12:51 AV 14/12/2014 14:31 AV
GP SM 72 2237 29/01/2013 10:25 AV 14/12/2014 13:58 AV
GPR2 KH 68 871 06/02/2013 21:24 AV 14/12/2014 14:34 AV
GPR3 AV 65 1160 06/02/2013 21:24 AV 14/12/2014 14:05 AV
GPR3 JM 68 1819 11/02/2013 22:16 AV 14/12/2014 14:05 AV
MS1 MH 63 775 11/02/2013 22:16 AV 14/12/2014 14:28 AV
GPR1 AC 66 862 18/02/2013 05:49 AV 14/12/2014 14:02 AV
MS1 AK 54 345 18/02/2013 05:49 AV 14/12/2014 14:28 AV
MS2 AK 71 1159 18/02/2013 05:49 AV 14/12/2014 14:29 AV
MS2 AP 68 724 18/02/2013 05:49 AV 14/12/2014 14:29 AV
PGY1 CM 66 1085 18/02/2013 05:49 AV 14/12/2014 14:31 AV
MS2 DT 66 1092 18/02/2013 05:49 AV 14/12/2014 14:29 AV
MS2 KM 66 1065 18/02/2013 05:49 AV 14/12/2014 14:29 AV
PGY2 TW 65 1202 18/02/2013 23:37 AV 14/12/2014 14:32 AV
PGY4 AR 64 1217 18/02/2013 23:37 AV 14/12/2014 16:49 AV
PGY1 BS 69 1294 18/02/2013 23:37 AV 14/12/2014 14:31 AV
PGY2 NV 68 1044 18/02/2013 23:37 AV 14/12/2014 14:32 AV
PGY3 AG 66 1593 18/02/2013 23:37 AV 14/12/2014 14:32 AV
MS4 GG 69 1132 24/02/2013 22:39 AV 14/12/2014 14:30 AV
MS2 LM 66 732 07/03/2013 22:11 AV 14/12/2014 14:29 AV
MS2 ST 65 523 07/03/2013 22:11 AV 14/12/2014 14:29 AV
MS4 LS 67 886 07/03/2013 22:11 AV 14/12/2014 14:30 AV
MS4 RG 56 642 07/03/2013 22:11 AV 14/12/2014 14:30 AV
GP AT 65 704 07/03/2013 22:11 AV 14/12/2014 13:54 AV
GP BT 71 887 07/03/2013 22:11 AV 14/12/2014 14:34 AV
Sources
Nodes
Classifications
Collections
Queries
Reports
Models
Folders
47 Items

Appendix 3: Participant Consent Form and Information Sheet

PARTICIPANT CONSENT FORM

Title of Research Project:
Decision Factors that determine choice of medical specialty amongst medical students, pre-vocational doctors, General Practice Registrars and General Practitioners.

Name of Participant_____

- I understand the purpose and procedures of the study.
- I have been provided with the participant information sheet.
- I understand that the procedure itself may not benefit me.
- I understand that my involvement is voluntary and I can withdraw at any time without problem.
- I understand that no personal identifying information like my name and address will be used and that all information will be securely stored for 7 years before being destroyed.
- I have been given the opportunity to ask questions.
- I agree to have this interview recorded
- I agree to participate in the study outlined to me.

_____ _____
Participant Signature Date

_____ _____
Investigator Signature Date

Curtin University of Technology
Graduate School of Business

Participant Information Sheet

Dear Participant,

My name is Amit Vohra and I am currently enrolled in the PhD. Program at the Graduate School of Business, Curtin University of Technology. I am seeking your participation in a doctoral research study and the following sections provide an overview of this research.

Research Title Decision Factors that determine choice of medical specialty amongst medical students, pre-vocational doctors, General Practice Registrars and General Practitioners.

Purpose of Research The central focus of the research is to explore and compare motivational and career choice markers amongst current and potential future entrants to the Australian General Practice Training Program. The study will explore and compare perceptions related to personal, professional and social factors that determine choice of medical specialty of medical students, pre-vocational doctors, GP Registrars and post fellowship GPs. This will lead to a discovery of common perceptions across different cohorts and an understanding of when and how the choice is made. This will provide an insight on how current and future GP promotion programs can be optimized to enhance uptake into General Practice. This research will provide a better understanding of the issues that need to be considered for increasing the attractiveness and retention of GPs in Australia with implications for the federal government in strategic planning for future policy in this area.

Your Role Your participation will be in the form of an interview where I will ask questions in relation to your choice of medical specialty and in particular, the type of issues you considered whilst making this choice. In case, you have not yet made this choice then I would be keen to learn about the various things that you have considered or are currently considering in making this decision. If you have already chosen your specialty then I would be keen to learn about your experiences whilst making this choice and whether your perceptions have changed in any way since you made your choice. The interview style would be conversational and should take approximately 60 minutes to complete.

Consent to Participate Your involvement in the research is entirely voluntary. You have the right to withdraw at any stage without it affecting your rights or my responsibilities. When you have signed the consent form I will assume that you have agreed to participate and allow me to use your data in this research.

Confidentiality The information you provide will be kept separate from your personal details, and only I and my research supervisor will have access to this. The interview will be recorded transcribed verbatim. The transcript will not have your name or any other identifying information on it and in adherence to university

policy, the interview tapes and transcribed information will be kept in a locked cabinet for seven years, before they are destroyed.

Further Information This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 138/2008). If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or emailing hrec@curtin.edu.au.

If you require any further information about the study, please feel free to contact me on 0431 909 502 or via email at amit.vohra77@gmail.com. Alternately you may contact my supervisor Prof Rick Ladyshewsky on 08 9266 3832 or via email at Rick.Ladyshewsky@gsb.curtin.edu.au **Thank you for your involvement in this research, your participation is greatly appreciated.**

Best Regards,

Amit Vohra

Appendix 4: Participant Classification Sheet & Node Classification Summary

Participants	Age	Area grew up in	Childhood Exposure to GP	Childhood Exposure to non-GP medicine	Gender	Stage of Training	University program
MS1 AK	31-35	Regional	No exposure to GP	Minor exposure to medicine	Male	Medical Students	Post graduate
MS1 MH	26-30	Urban or outer metro area	No exposure to GP	No exposure to medicine	Female	Medical Students	Post graduate
MS2 AK	17-24	Urban or outer metro area	No exposure to GP	Substantial Exposure to medicine	Female	Medical Students	Post graduate
MS2 AP	17-24	Urban or outer metro area	Minor exposure to GP	No exposure to medicine	Female	Medical Students	Undergraduate
MS2 DT	26-30	Regional	Minor exposure to GP	Substantial Exposure to medicine	Male	Medical Students	Undergraduate
MS2 KM	36-40	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Female	Medical Students	Post graduate
MS2 LM	17-24	Rural or remote	No exposure to GP	No exposure to medicine	Male	Medical Students	Post graduate
MS2 ST	36-40	Rural or remote	No exposure to GP	No exposure to medicine	Female	Medical Students	Post graduate
MS4 GG	36-40	Rural or remote	No exposure to GP	Substantial Exposure to medicine	Male	Medical Students	Post graduate
MS4 GN	17-24	Urban or outer metro area	No exposure to GP	Substantial Exposure to medicine	Female	Medical Students	Undergraduate
MS4 LS	31-35	Urban or outer metro area	No exposure to GP	No exposure to medicine	Female	Medical Students	Post graduate
MS4 RG	26-30	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Male	Medical Students	Undergraduate
PGY1 AC	26-30	Urban or outer	Minor exposure	Minor exposure to	Female	Pre-vocational	Post graduate

Participants	Age	Area grew up in	Childhood Exposure to GP	Childhood Exposure to non-GP medicine	Gender	Stage of Training	University program
		metro area	to GP	medicine		Doctors	
PGY1 BS	17-24	Urban or outer metro area	No exposure to GP	Minor exposure to medicine	Female	Pre-vocational Doctors	Undergraduate
PGY1 CL	26-30	Urban or outer metro area	Minor exposure to GP	Substantial Exposure to medicine	Female	Pre-vocational Doctors	Post graduate
PGY1 CM	26-30	Urban or outer metro area	No exposure to GP	Substantial Exposure to medicine	Male	Pre-vocational Doctors	Post graduate
PGY1 JR	26-30	Urban or outer metro area	No exposure to GP	No exposure to medicine	Male	Pre-vocational Doctors	Post graduate
PGY1 LL	31-35	Urban or outer metro area	No exposure to GP	No exposure to medicine	Female	Pre-vocational Doctors	Post graduate
PGY2 CC	26-30	Urban or outer metro area	Minor exposure to GP	Substantial Exposure to medicine	Female	Pre-vocational Doctors	Post graduate
PGY2 NW	31-35	Urban or outer metro area	No exposure to GP	Minor exposure to medicine	Female	Pre-vocational Doctors	Undergraduate
PGY2 TW	17-24	Urban or outer metro area	Substantial Exposure to GP	Minor exposure to medicine	Male	Pre-vocational Doctors	Undergraduate
PGY3 AG	17-24	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Male	Pre-vocational Doctors	Undergraduate
PGY4 AR	26-30	Urban or outer metro area	Minor exposure to GP	Substantial Exposure to medicine	Female	Pre-vocational Doctors	Post graduate
GPR1 AC	26-30	Urban or outer metro area	Minor exposure to GP	Minor exposure to medicine	Female	GP Registrar	Post graduate
GPR1 GC	26-30	Urban or outer metro area	Minor exposure to GP	Substantial Exposure to medicine	Male	GP Registrar	Post graduate
GPR2 DC	26-30	Regional	No exposure to GP	No exposure to medicine	Male	GP Registrar	Post graduate
GPR2 FS	31-35	Rural or remote	Substantial Exposure to GP	Substantial Exposure to medicine	Male	GP Registrar	Post graduate
GPR2 KH	31-35	Regional	No exposure to GP	No exposure to medicine	Female	GP Registrar	Post graduate

Participants	Age	Area grew up in	Childhood Exposure to GP	Childhood Exposure to non-GP medicine	Gender	Stage of Training	University program
GPR2 LT	26-30	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Male	GP Registrar	Undergraduate
GPR2 MW	26-30	Rural or remote	Substantial Exposure to GP	No exposure to medicine	Female	GP Registrar	Undergraduate
GPR3 AK	31-35	Rural or remote	Minor exposure to GP	No exposure to medicine	Female	GP Registrar	Undergraduate
GPR3 AV	31-35	Urban or outer metro area	Minor exposure to GP	Substantial Exposure to medicine	Male	GP Registrar	Post graduate
GPR3 CM	26-30	Rural or remote	Minor exposure to GP	Minor exposure to medicine	Female	GP Registrar	Undergraduate
GPR3 JM	31-35	Urban or outer metro area	No exposure to GP	Substantial Exposure to medicine	Female	GP Registrar	Undergraduate
GPR3 PW	26-30	Urban or outer metro area	No exposure to GP	No exposure to medicine	Female	GP Registrar	Undergraduate
GP AT	31-35	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Female	Practising GPs	Post graduate
GP BT	41-50	Urban or outer metro area	Substantial Exposure to GP	Substantial Exposure to medicine	Male	Practising GPs	Undergraduate
GP CB	41-50	Rural or remote	No exposure to GP	Minor exposure to medicine	Female	Practising GPs	Undergraduate
GP EM	41-50	Rural or remote	Minor exposure to GP	Substantial Exposure to medicine	Male	Practising GPs	Undergraduate
GP EV	31-35	Urban or outer metro area	No exposure to GP	No exposure to medicine	Male	Practising GPs	Undergraduate
GP GF	36-40	Regional	No exposure to GP	Substantial Exposure to medicine	Male	Practising GPs	Post graduate
GP GL	36-40	Urban or outer metro area	No exposure to GP	No exposure to medicine	Male	Practising GPs	Undergraduate
GP MF	36-40	Urban or outer metro area	Minor exposure to GP	Minor exposure to medicine	Female	Practising GPs	Undergraduate
GP MM	36-40	Urban or outer	No exposure to	No exposure to	Female	Practising GPs	Post graduate

Participants	Age	Area grew up in	Childhood Exposure to GP	Childhood Exposure to non-GP medicine	Gender	Stage of Training	University program
		metro area	GP	medicine			
GP SA	36-40	Rural or remote	Substantial Exposure to GP	Minor exposure to medicine	Male	Practising GPs	Undergraduate
GP SM	31-35	Urban or outer metro area	No exposure to GP	No exposure to medicine	Female	Practising GPs	Undergraduate
GP TS	41-50	Urban or outer metro area	No exposure to GP	Not Applicable	Male	Practising GPs	Undergraduate

Node Classification Summary

19/09/2015 23:38

Attribute Value	Attribute Value Description	Number of Nodes Assigned

Classification Name: Respondents

Attribute Name: Age

17-24	7
25-30	16
31-35	12
36-40	8
41-50	4

Attribute Name: Area grew up in

Regional	5
Rural or remote	10
Urban or outer metro area	32

Attribute Name: Childhood Exposure to GP

No exposure to GP	24
Non-significant exposure to GP	13
Siginificant Exposure to GP	10

Attribute Name: Childhood Exposure to non-GP medicine

No exposure to medicine	16
Non-significant exposure to medicine	11
Not Applicable	1
Siginificant Exposure to medicine	19

Attribute Name: Gender

Female	26

Attribute Value	Attribute Value Description	Number of Nodes Assigned
Male		21

Attribute Name: Stage of Training

GP Registar	12
Medical Students	12
Post Fellowship GPs	12
Pre-vocational Doctors	11

Attribute Name: University program

Post graduate	23
Undergraduate	24

Appendix 5: Microsoft Excel Spread Sheet to Manage Data Horizontalisation Process

Target Groups	Personal Factors	Social Factors	Professional factors
Medical Students	**Demographic Factors** Generational differences BB,X,Y Gender Under graduate Vs Post graduate entrants – different life stage Full fee paying students Vs Commonwealth funded Choice of Medical School **Biometric Factors** Personality types suited to GP Rural vs Urban origin Early childhood experiences - exposure to GP and / or medicine **Personal Choice Factors** Length of training	Impact of Peers both positive & negative How GP is perceived within medical profession and wider community Perception of Prestige Influence of academic / clinical role models and mentors Medical school environment supportive or non supportive of GP Exposure to scholarship programs: both positive and negative Exposure via GP rotations: both positive and negative	Interaction with patients Relationship with patients Continuity of care Dealing with uncertainty and undifferentiated diagnosis Variety & scope of practice Ability to sub-specialize Team based care

Target Groups	Personal Factors	Social Factors	Professional factors
	Life style Personality– job fit Money Flexibility		
Pre-Vocational Doctors	**Demographic Factors** Generational differences BB,X,Y Gender Under graduate Vs Post graduate entrants – different life stage Full fee paying students Vs Commonwealth funded Choice of Medical School **Biometric Factors** Personality types suited to GP vs other specialties Rural vs Urban origin Early childhood experiences - exposure to GP and / or medicine	Impact of Peers both positive & negative How GP is perceived within medical profession and wider community Perception of Prestige Influence of academic / clinical role models and mentors Medical school environment supportive or non supportive of GP Exposure to scholarship programs: both positive and negative Exposure via GP rotations: both positive and negative	Interaction with patients Relationship with patients Continuity of care Dealing with uncertainty and undifferentiated diagnosis Variety & scope of practice Ability to sub-specialize Team based care

Target Groups	Personal Factors	Social Factors	Professional factors
	Personal Choice Factors Length of training Life style Flexibility in training Personality– job fit Money Flexible career		
GP Registrars	**Demographic Factors** Generational differences BB,X,Y Gender Under graduate Vs Post graduate entrants – different life stage Full fee paying students Vs Commonwealth funded Choice of Medical School **Biometric Factors** Personality types suited to GP vs other specialties	Impact of Peers both positive & negative How GP is perceived within medical profession and wider community Perception of Prestige Influence of academic / clinical role models and mentors Medical school environment supportive or non supportive of GP Exposure to scholarship programs: both positive and negative Exposure via GP rotations: both positive and negative	Interaction with patients Relationship with patients Continuity of care Dealing with uncertainty and undifferentiated diagnosis Variety & scope of practice Ability to sub-specialize Team based care

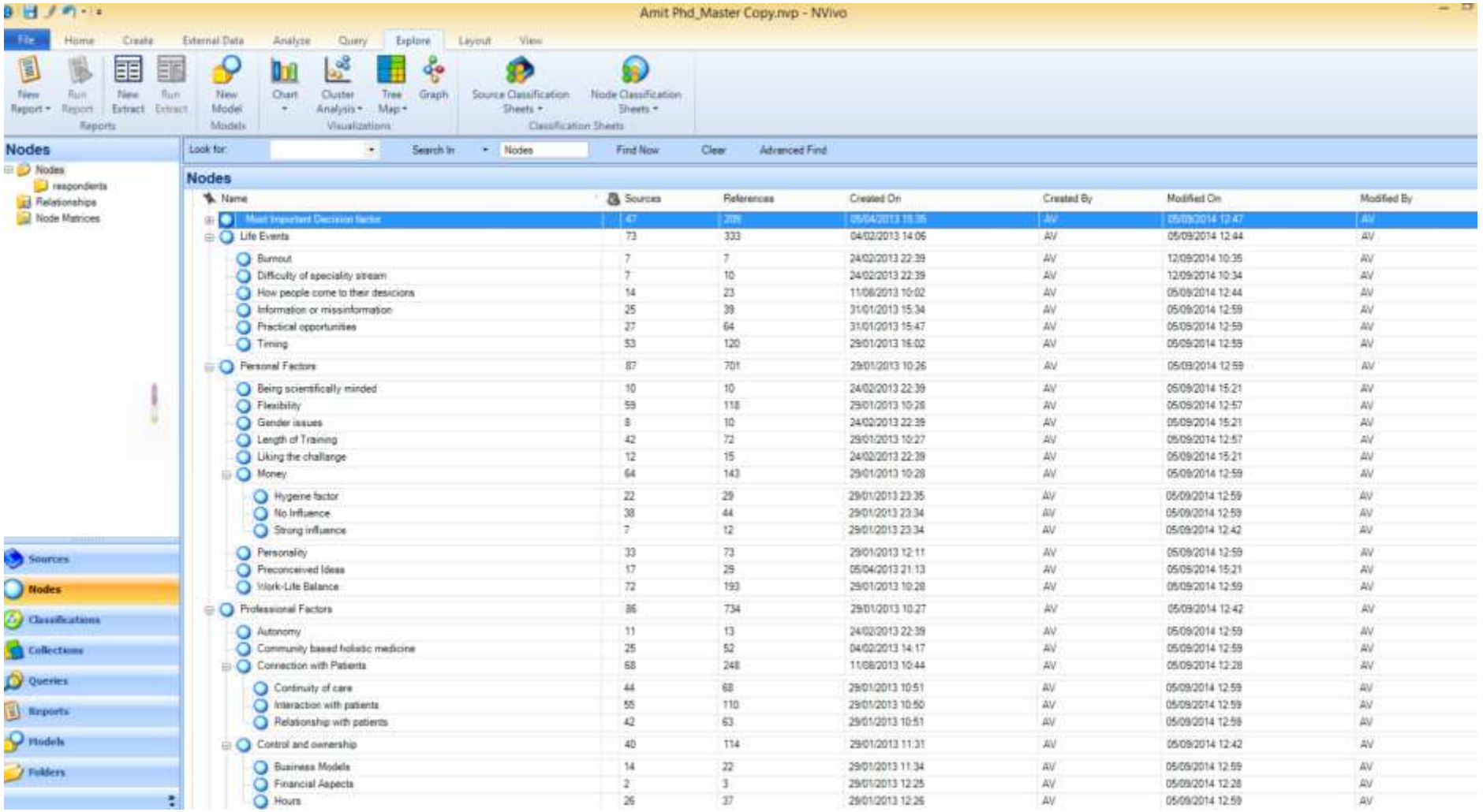
Target Groups	Personal Factors	Social Factors	Professional factors
	Rural vs Urban origin Early childhood experiences - exposure to GP and / or medicine **Personal Choice Factors** Length of training Life style Flexibility in training Personality– job fit Money Flexible career		
Practising GPs	**Demographic Factors** Generational differences BB,X,Y Gender Under graduate Vs Post graduate entrants – different life stage Full fee paying students Vs Commonwealth funded Choice of Medical School **Biometric Factors**	Impact of Peers both positive & negative How GP is perceived within medical profession and wider community Perception of Prestige Influence of academic / clinical role models and mentors Medical school environment supportive or non supportive of GP Exposure to scholarship programs: both positive and negative Exposure via GP rotations: both	Interaction with patients Relationship with patients Continuity of care Dealing with uncertainty and undifferentiated diagnosis Variety & scope of practice Ability to sub-specialize Team based care

Target Groups	Personal Factors	Social Factors	Professional factors
	Personality types suited to GP vs other specialties Rural vs Urban origin Early childhood experiences - exposure to GP and / or medicine **Personal Choice Factors** Length of training Life style Flexibility in Training Personality– job fit Money Flexible career	positive and negative	

COLOR GUIDE

RED: High Importance / impact on decisions
BLUE: Moderate Importance /Impact on decisions
GREEN: No Importance / Impact on decisions
Black: Need more Data

Appendix 6: Node Structure Report from QSR NVIVO®



Node Structure

19/09/2015 23:39

Hierarchical Name	Nickname	Aggregate	User Assigned
Node			
Nodes			
Nodes\\Decision factors - choice of specialty		Yes	None
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor		Yes	Purple
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Primary driver		Yes	Orange
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Primary driver\Personal		No	Red
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Primary driver\Professional		No	Pink
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Primary driver\Social		No	Green
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Secondary Driver		Yes	Blue
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Secondary Driver\Personal		No	Yellow
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Secondary Driver\Professional		No	Purple
Nodes\\Decision factors - choice of specialty\ Most Important Decision factor\Secondary Driver\Social		No	Orange
Nodes\\Decision factors - choice of specialty\Life Events		Yes	Yellow
Nodes\\Decision factors - choice of specialty\Life Events\Burnout		No	None
Nodes\\Decision factors - choice of specialty\Life Events\Difficulty of speciality stream		No	None
Nodes\\Decision factors - choice of specialty\Life Events\How people come to their desicions		No	Green
Nodes\\Decision factors - choice of specialty\Life Events\Information or missinformation		No	Green
Nodes\\Decision factors - choice of specialty\Life Events\Practical opportunities		No	Purple
Nodes\\Decision factors - choice of specialty\Life Events\Timing		No	Red
Nodes\\Decision factors - choice of specialty\Personal Factors		Yes	Green

Nodes\\Decision factors - choice of specialty\Personal Factors\Being scientifically minded	No	None
Nodes\\Decision factors - choice of specialty\Personal Factors\Flexibility	No	Purple
Nodes\\Decision factors - choice of specialty\Personal Factors\Gender issues	No	None
Nodes\\Decision factors - choice of specialty\Personal Factors\Length of Training	No	Red
Nodes\\Decision factors - choice of specialty\Personal Factors\Liking the challange	No	None
Nodes\\Decision factors - choice of specialty\Personal Factors\Money	Yes	Blue
Nodes\\Decision factors - choice of specialty\Personal Factors\Money\Hygeine factor	No	Green
Nodes\\Decision factors - choice of specialty\Personal Factors\Money\No Influence	No	Red
Nodes\\Decision factors - choice of specialty\Personal Factors\Money\Strong influence	No	Blue
Nodes\\Decision factors - choice of specialty\Personal Factors\Personality	No	Orange
Nodes\\Decision factors - choice of specialty\Personal Factors\Preconceived Ideas	No	Green

Hierarchical Name	Nickname	Aggregate	User Assigned
Nodes\\Decision factors - choice of specialty\Personal Factors\Work-Life Balance		No	Orange
Nodes\\Decision factors - choice of specialty\Professional Factors		Yes	Purple
Nodes\\Decision factors - choice of specialty\Professional Factors\Autonomy		No	None
Nodes\\Decision factors - choice of specialty\Professional Factors\Community based holistic medicine		No	Green
Nodes\\Decision factors - choice of specialty\Professional Factors\Connection with Patients		Yes	None
Nodes\\Decision factors - choice of specialty\Professional Factors\Connection with Patients\Continuity of care		No	Purple
Nodes\\Decision factors - choice of specialty\Professional Factors\Connection with Patients\Interaction with patients		No	Blue
Nodes\\Decision factors - choice of specialty\Professional Factors\Connection with Patients\Relationship with patients		No	Yellow
Nodes\\Decision factors - choice of specialty\Professional Factors\Control and ownership		Yes	Red
Nodes\\Decision factors - choice of specialty\Professional Factors\Control and ownership\Business Models		No	Green

Nodes\\Decision factors - choice of specialty\Professional Factors\Control and ownership\Financial Aspects	No	Purple
Nodes\\Decision factors - choice of specialty\Professional Factors\Control and ownership\Hours	No	Red
Nodes\\Decision factors - choice of specialty\Professional Factors\Diagnostics	No	None
Nodes\\Decision factors - choice of specialty\Professional Factors\Job or professional satisfaction	No	None
Nodes\\Decision factors - choice of specialty\Professional Factors\Procedural aspects	Yes	Orange
Nodes\\Decision factors - choice of specialty\Professional Factors\Procedural aspects\Important	No	Blue
Nodes\\Decision factors - choice of specialty\Professional Factors\Procedural aspects\Not important	No	Red
Nodes\\Decision factors - choice of specialty\Professional Factors\Variety and scope of practice	No	Pink
Nodes\\Decision factors - choice of specialty\Social Factors	Yes	Red
Nodes\\Decision factors - choice of specialty\Social Factors\Academic or clinical role models	Yes	Blue
Nodes\\Decision factors - choice of specialty\Social Factors\Exposure via GP rotations	Yes	Green
Nodes\\Decision factors - choice of specialty\Social Factors\Hospital system environment	Yes	Purple
Nodes\\Decision factors - choice of specialty\Social Factors\Impact of peers	Yes	Red
Nodes\\Decision factors - choice of specialty\Social Factors\Influence of family	Yes	Orange
Nodes\\Decision factors - choice of specialty\Social Factors\Lived Experiences	No	None
Nodes\\Decision factors - choice of specialty\Social Factors\Media influences	No	None
Nodes\\Decision factors - choice of specialty\Social Factors\Perception of prestige	Yes	Yellow
Nodes\\Decision factors - choice of specialty\Social Factors\Perception of prestige\Hierarchy	No	None
Nodes\\Decision factors - choice of specialty\Social Factors\Perception of prestige\Stereotypes	No	None
Nodes\\Decision factors - choice of specialty\Social Factors\Support networks	No	None
Nodes\\positive negative	No	None
Nodes\\positive negative\Negative	No	Red
Nodes\\positive negative\Positive	No	Blue

Nodes\\respondents

Nodes\\respondents\\GP AT	No	None

Hierarchical Name	Nickname	Aggregate	User Assigned
Nodes\\respondents\\GP BT		No	None
Nodes\\respondents\\GP CB		No	None
Nodes\\respondents\\GP EM		No	None
Nodes\\respondents\\GP EV		No	None
Nodes\\respondents\\GP GF		No	None
Nodes\\respondents\\GP GL		No	None
Nodes\\respondents\\GP MF		No	None
Nodes\\respondents\\GP MM		No	None
Nodes\\respondents\\GP SA		No	None
Nodes\\respondents\\GP SM		No	None
Nodes\\respondents\\GP TS		No	None
Nodes\\respondents\\GPR1 AC		No	None
Nodes\\respondents\\GPR1 GC		No	None
Nodes\\respondents\\GPR2 DC		No	None
Nodes\\respondents\\GPR2 FS		No	None
Nodes\\respondents\\GPR2 KH		No	None
Nodes\\respondents\\GPR2 LT		No	None
Nodes\\respondents\\GPR2 MW		No	None
Nodes\\respondents\\GPR3 AK		No	None
Nodes\\respondents\\GPR3 AV		No	None
Nodes\\respondents\\GPR3 CM		No	None
Nodes\\respondents\\GPR3 JM		No	None
Nodes\\respondents\\GPR3 PW		No	None
Nodes\\respondents\\MS1 AK		No	None
Nodes\\respondents\\MS1 MH		No	None
Nodes\\respondents\\MS2 AK		No	None
Nodes\\respondents\\MS2 AP		No	None
Nodes\\respondents\\MS2 DT		No	None
Nodes\\respondents\\MS2 KM		No	None
Nodes\\respondents\\MS2 LM		No	None
Nodes\\respondents\\MS2 ST		No	None
Nodes\\respondents\\MS4 GG		No	None
Nodes\\respondents\\MS4 GN		No	None

Nodes\\respondents\\MS4 LS	No	None
Nodes\\respondents\\MS4 RG	No	None
Nodes\\respondents\\PGY1 BS	No	None
Nodes\\respondents\\PGY1 CL	No	None
Nodes\\respondents\\PGY1 CM	No	None
Nodes\\respondents\\PGY1 JR	No	None
Nodes\\respondents\\PGY1 LL	No	None
Nodes\\respondents\\PGY2 AC	No	None

Hierarchical Name	Nickname	Aggregate	User Assigned
Nodes\\respondents\\PGY2 CC		No	None
Nodes\\respondents\\PGY2 NW		No	None
Nodes\\respondents\\PGY2 TW		No	None
Nodes\\respondents\\PGY3 AG		No	None
Nodes\\respondents\\PGY4 AR		No	None

Appendix 7: Node Summary Report from QSR NVIVO®

Node Summary

19/09/2015 23:43

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Node

Nickname: Nodes\\Decision factors - choice of specialty

Classification:

Aggregated: Yes

Document	47	2008	267,184	7,369	
Memo	45	655	34,338	683	

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor

Aggregated: Yes

Document	4	14	1,086	21	
Memo	43	195	9,807	209	

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Primary driver

Aggregated: Yes

Document	3	9	546	14	
Memo	42	112	5,814	119	

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Primary driver\Personal

Aggregated: No

Document	2	4	199	5
Memo	25	51	2,861	56

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Primary driver\Professional

Aggregated: No

Document	1	2	105	2
Memo	20	38	1,825	40

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Primary driver\Social

Aggregated: No

Document	2	3	242	7
Memo	13	22	1,028	22

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Secondary Driver

Aggregated: Yes

Document	4	5	540	7
Memo	37	83	3,993	90

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Secondary Driver\Personal

Aggregated: No

Memo	14	25	1,145	27

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Secondary Driver\Professional

Aggregated: No

Document	2	3	246	3
Memo	23	39	1,946	43

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\ Most Important

Classification: Decision factor\Secondary Driver\Social

Aggregated: No

Document	2	2	294	4
Memo	12	18	874	19

Nickname: Nodes\\Decision factors - choice of specialty\Life Events

Classification:

Aggregated: Yes

Document	44	259	34,290	960
Memo	29	74	5,061	81

Nickname: Nodes\\Decision factors - choice of specialty\Life Events\Burnout

Classification:

Aggregated: No

Document	3	3	340	9
Memo	4	4	192	6

Nickname: Nodes\\Decision factors - choice of specialty\Life Events\Difficulty of speciality stream

Classification: No

Aggregated:

Document	4	5	986	24
Memo	3	5	270	5

Nickname: Nodes\\Decision factors - choice of specialty\Life Events\How people come to their desicions

Classification: No

Aggregated:

Document	5	6	826	16
Memo	9	17	1,361	19

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\Life Events\Information or missinformation

Classification: No

Aggregated:

Document	18	30	3,052	76
Memo	7	9	587	9

Nickname: Nodes\\Decision factors - choice of specialty\Life Events\Practical opportunities

Classification: No

Aggregated:

Document	25	61	8,877	248
Memo	2	3	148	3

Nickname: Nodes\\Decision factors - choice of specialty\Life

Classification: Events\Timing

Aggregated: No

Document	40	105	13,643	425
Memo	13	15	1,134	15

Nickname: Nodes\\Decision factors - choice of specialty\Personal Factors

Classification:

Aggregated: Yes

Document	47	544	76,268	2,107
Memo	40	157	8,012	160

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Being scientifically minded

Aggregated: No

Document	7	7	984	31
Memo	3	3	182	3

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Flexibility

Aggregated: No

Document	39	89	13,131	407
Memo	20	29	1,371	29

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Gender issues

Aggregated: No

Document	3	5	550	6
Memo	5	5	354	5

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Length of Training

Aggregated: No

Document	32	62	8,758	228
Memo	10	10	420	10

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Liking the challange

Aggregated: No

Document	9	12	1,904	45
Memo	3	3	156	3

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Money

Aggregated: Yes

Document	43	111	18,042	515
Memo	21	32	1,128	32

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Money\Hygeine factor

Aggregated: No

Document	20	27	4,659	125

Memo	2	2	56	2

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Money\No Influence

Aggregated: No

Document	24	27	3,402	119
Memo	14	17	320	17

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Money\Strong influence

Aggregated: No

Document	3	6	746	10
Memo	4	6	511	6

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Personality

Aggregated: No

Document	27	65	8,641	202
Memo	6	8	412	8

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Preconceived Ideas

Aggregated: No

Document	6	9	1,067	23
Memo	11	20	1,640	22

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\Personal

Classification: Factors\Work-Life Balance

Aggregated: No

Document	44	152	19,215	550
Memo	28	41	2,062	42

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors

Aggregated: Yes

Document	47	612	72,764	2,014
Memo	39	122	5,652	122

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Autonomy

Aggregated: No

Document	6	8	833	40
Memo	5	5	309	5

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Community based holistic medicine

Aggregated: No

Document	21	46	4,445	93
Memo	4	6	285	6

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Connection with Patients

Aggregated: Yes

Document	45	204	19,364	500
Memo	23	44	1,790	44

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Nickname:	**Nodes\\Decision factors - choice of specialty\Professional**				
Classification:	**Factors\Connection with Patients\Continuity of care**				
Aggregated:	**No**				
Document	30	52	3,948	112	
Memo	14	16	653	16	
Nickname:	**Nodes\\Decision factors - choice of specialty\Professional**				
Classification:	**Factors\Connection with Patients\Interaction with patients**				
Aggregated:	**No**				
Document	39	94	10,178	270	
Memo	16	16	640	16	
Nickname:	**Nodes\\Decision factors - choice of specialty\Professional**				
Classification:	**Factors\Connection with Patients\Relationship with patients**				
Aggregated:	**No**				
Document	30	51	4,287	100	
Memo	12	12	497	12	
Nickname:	**Nodes\\Decision factors - choice of specialty\Professional**				
Classification:	**Factors\Control and ownership**				
Aggregated:	**Yes**				
Document	34	103	17,177	581	
Memo	6	11	483	11	

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Control and ownership\Business Models

Aggregated: No

Document	13	21	4,171	164

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Memo	1	1	42	1	

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Control and ownership\Financial Aspects

Aggregated: No

Document	2	3	1,957	83

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Control and ownership\Hours

Aggregated: No

Document	25	36	4,648	125
Memo	1	1	42	1

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Diagnostics

Aggregated: No

Document	10	15	1,711	43
Memo	4	4	97	4

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Job or professional satisfaction

Aggregated: No

Document	16	25	3,644	91
Memo	12	14	848	14

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Procedural aspects

Aggregated: Yes

Document	27	73	8,335	208

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Memo	2	2	66	2	

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Procedural aspects\Important

Aggregated: No

Document	13	18	2,384	46
Memo	2	2	66	2

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Procedural aspects\Not important

Aggregated: No

Document	12	20	1,732	54

Nickname: Nodes\\Decision factors - choice of specialty\Professional

Classification: Factors\Variety and scope of practice

Aggregated: No

Document	44	119	15,854	429
Memo	27	29	1,453	29

Nickname: Nodes\\Decision factors - choice of specialty\Social Factors

Classification:

Aggregated: Yes

Document	47	579	82,776	2,267
Memo	35	107	5,806	111

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Academic or clinical role models

Aggregated: Yes

Document	42	117	16,872	468

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Memo	12	15	751	15	

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Exposure via GP rotations

Aggregated: Yes

Document	31	60	9,073	294
Memo	13	13	1,160	16

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Hospital system environment

Aggregated: Yes

Document	30	70	7,849	230
Memo	3	5	319	5

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Impact of peers

Aggregated: Yes

Document	43	105	14,355	358
Memo	9	9	366	9

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Influence of family

Aggregated: Yes

Document	28	52	7,439	199
Memo	6	7	364	8

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Lived Experiences

Aggregated: No

Document	18	31	4,047	107

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Memo	18	28	1,706	28	

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Media influences

Aggregated: No

Document	12	21	2,380	54
Memo	1	1	28	1

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Perception of prestige

Aggregated: Yes

Document	39	98	16,412	443
Memo	15	25	953	25

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Perception of prestige\Hierarchy

Aggregated: No

Document	7	7	2,025	57
Memo	1	1	28	1

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Perception of prestige\Stereotypes

Aggregated: No

Document	14	17	2,991	66
Memo	7	7	267	7

Source Type	Number of Sources	Number of Coding	Number of Words Coded	Number of Paragraphs Coded	Duration Coded

Nickname: Nodes\\Decision factors - choice of specialty\Social

Classification: Factors\Support networks

Aggregated: No

Document	8	10	2,140	68

Appendix 8: Source Summary Report from **QSR NVIVO®**

Source Summary

19/09/2015 23:44

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
4932	295	31	1.0000	98
6769	427	33	1.0000	124
4305	213	31	1.0000	107
4938	113	30	1.0000	146
5581	215	27	1.0000	113
2467	185	24	1.0000	81
4666	293	30	1.0000	101
4926	274	33	1.0000	158
6051	285	29	1.0000	129

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
3608	89	33	1.0000	116
8725	561	34	1.0000	311
5615	161	36	1.0000	139
5337	281	31	1.0000	127
5920	213	25	1.0000	153
4608	187	27	1.0000	115
4091	201	30	1.0000	124
3646	107	30	1.0000	127
1853	147	14	1.0000	26
5325	295	27	1.0000	123
4394	249	29	1.0000	127

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
7697	389	27	1.0000	152
7385	217	29	1.0000	184
10101	567	30	1.0000	242

3086	127	22	1.0000	64
2477	167	20	1.0000	50
3067	217	27	1.0000	105
6207	314	33	1.0000	161
4651	80	30	1.0000	110
5777	297	28	1.0000	155
4311	128	30	1.0000	145
5155	96	29	1.0000	110

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
4349	136	29	1.0000	76
7120	107	31	1.0000	157
5464	152	32	1.0000	129
4367	91	29	1.0000	135
4625	103	26	1.0000	95
4255	223	31	1.0000	186
6730	340	36	1.0000	227
6022	110	28	1.0000	157
7487	220	25	1.0000	227
4362	91	29	1.0000	132
5311	280	30	1.0000	122

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
6814	340	36	1.0000	227
4118	183	30	1.0000	141
4239	194	28	1.0000	170
7362	404	28	1.0000	211
6122	115	26	1.0000	148
383	6	27	1.0000	72
484	8	32	1.0000	86
622	7	26	1.0000	91
285	3	7	1.0000	8
388	5	24	1.0000	79

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
393	5	26	1.0000	69

90	4	3	1.0000	3
285	5	16	1.0000	43
213	3	21	1.0000	38
303	3	17	1.0000	28
182	4	13	1.0000	20
442	12	25	1.0000	79
431	7	20	1.0000	51
250	5	20	1.0000	43
224	3	25	1.0000	82
780	15	9	1.0000	22

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
442	7	24	1.0000	68
292	3	17	1.0000	41
413	3	24	1.0000	51
170	2	15	1.0000	27
104	4	22	1.0000	43
257	5	20	1.0000	57
317	5	17	1.0000	31
394	7	19	1.0000	65
547	20	17	1.0000	41
836	21	7	1.0000	13
145	6	9	1.0000	18

Reports\\Source Summary Report

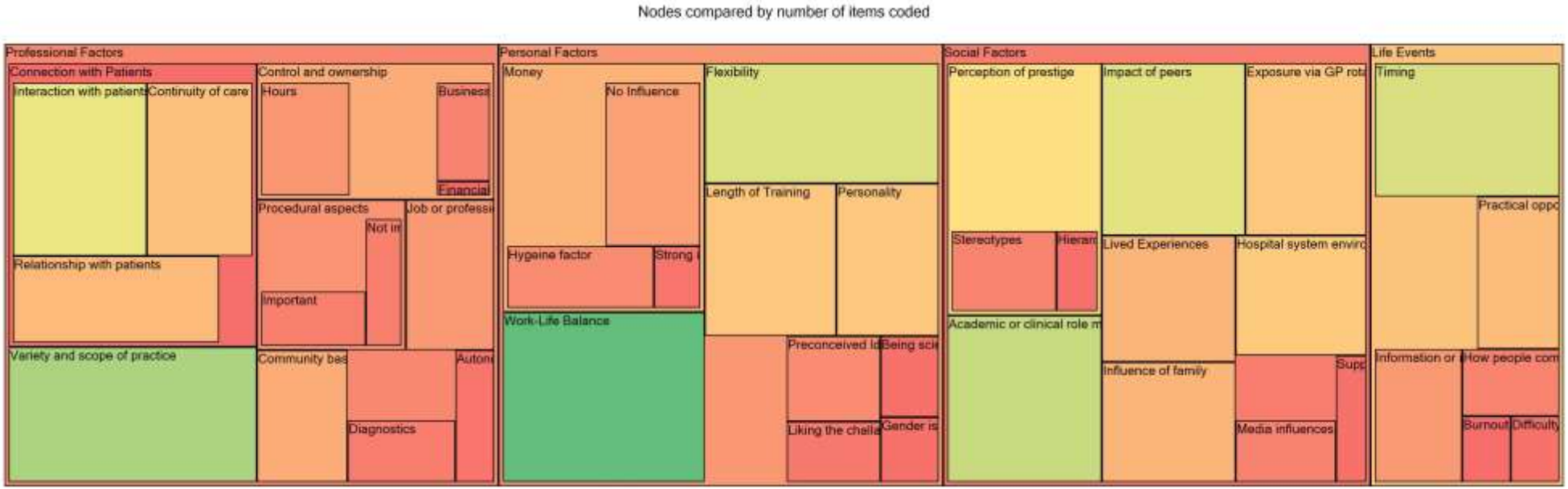
Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
546	11	27	1.0000	71
264	8	11	1.0000	22
223	1	25	1.0000	61
277	5	18	1.0000	60
204	7	12	1.0000	31
588	9	21	1.0000	59
347	5	20	1.0000	58
313	10	17	1.0000	36
442	12	25	1.0000	79
423	3	25	1.0000	69
616	13	20	1.0000	43

Reports\\Source Summary Report

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References
407	8	26	1.0000	60
342	5	20	1.0000	58
616	13	20	1.0000	43
265	9	17	1.0000	40
425	7	18	1.0000	69
639	11	18	1.0000	66
562	13	19	1.0000	69

Reports\\Source Summary Report

Appendix 9: Visual Representation of Coding Frequency from QSR NVIVO®



Appendix 10: Summary of Primary & Secondary Factors

Respondents	Age	Gender	Stage of Training	University program	Primary Driver	Secondary Driver
MS1 AK	31-35	Male	Medical Students	Post graduate	Personal	Professional
MS1 MH	25-30	Female	Medical Students	Post graduate	Personal	Professional
MS2 AK	17-24	Female	Medical Students	Post graduate	Personal	Professional
MS2 AP	17-24	Female	Medical Students	Undergraduate	Professional	Personal
MS2 DT	25-30	Male	Medical Students	Undergraduate	Personal	Social
MS2 KM	36-40	Female	Medical Students	Post graduate	Personal	Professional
MS2 LM	17-24	Male	Medical Students	Post graduate	Professional	Personal
MS2 ST	36-40	Female	Medical Students	Post graduate	Personal	Professional
MS4 GG	36-40	Male	Medical Students	Post graduate	Professional	Social
MS4 GN	17-24	Female	Medical Students	Undergraduate	Professional	Social
MS4 LS	31-35	Female	Medical Students	Post graduate	Professional	Social
MS4 RG	25-30	Male	Medical Students	Undergraduate	Personal	Professional
PGY1 BS	17-24	Female	Pre-vocational Doctors	Undergraduate	Professional	Personal
PGY1 CL	25-30	Female	Pre-vocational Doctors	Post graduate	Personal	Professional
PGY1 CM	25-30	Male	Medical Students	Post graduate	Social	Professional
PGY1 JR	25-30	Male	Pre-vocational Doctors	Post graduate	Social	Professional
PGY1 LL	31-35	Female	Medical Students	Post graduate	Professional	Social
PGY2 AC	25-30	Female	GP Registrar	Post graduate	Personal	Social
PGY2 CC	25-30	Female	Pre-vocational Doctors	Post graduate	Personal	Professional
PGY2 NW	31-35	Female	Pre-vocational Doctors	Undergraduate	Personal	Professional
PGY2 TW	17-24	Male	Pre-vocational Doctors	Undergraduate	Professional	Personal
PGY3 AG	17-24	Male	Pre-vocational Doctor	Undergraduate	Social	Personal
PGY4 AR	25-30	Female	Pre-vocational Doctors	Post graduate	Personal	Professional

Respondents	Age	Gender	Stage of Training	University program	Primary Driver	Secondary Driver
GPR1 AC	25-30	Female	GP Registrar	Post graduate	Personal	Social
GPR1 GC	25-30	Male	GP Registrar	Post graduate	Professional	Personal
GPR2 DC	25-30	Male	GP Registrar	Post graduate	Personal	Professional
GPR2 FS	31-35	Male	GP Registrar	Post graduate	Social	Professional
GPR2 KH	31-35	Female	GP Registrar	Post graduate	Social	Personal
GPR2 LT	25-30	Male	GP Registrar	Undergraduate	Professional	Social
GPR2 MW	25-30	Female	GP Registrar	Undergraduate	Personal	Professional
GPR3 AK	31-35	Female	GP Registrar	Undergraduate	Professional	Personal
GPR3 AV	31-35	Male	GP Registrar	Post graduate	Social	Professional
GPR3 CM	25-30	Female	GP Registrar	Undergraduate	Professional	Social
GPR3 JM	31-35	Female	GP Registrar	Undergraduate	Social	Personal
GPR3 PW	25-30	Female	GP Registrar	Undergraduate	Personal	Social
GP AT	31-35	Female	Practising GP	Post graduate	Professional	Personal
GP BT	46-50	Male	Practising GP	Undergraduate	Social	Professional
GP CB	46-50	Female	Practising GP	Undergraduate	Social	Professional
GP EM	41-45	Male	Practising GP	Undergraduate	Professional	Social
GP EV	31-35	Male	Practising GP	Undergraduate	Professional	Personal
GP GF	36-40	Male	Practising GP	Post graduate	Personal	Professional
GP GL	36-40	Male	Practising GP	Undergraduate	Professional	Personal
GP MF	36-40	Female	Practising GP	Undergraduate	Social	Professional
GP MM	36-40	Female	Practising GP	Post graduate	Personal	Professional
GP SA	36-40	Male	Practising GP	Undergraduate	Personal	Professional
GP SM	31-35	Female	Practising GP	Undergraduate	Professional	Personal
GP TS	41-45	Male	Practising GP	Undergraduate	Personal	Social

THE END